# Lowland Lake Rehabilitation Proposals
# 2004 - 2005

**PRE-REHABILITATION PLAN**
**Fish Lake and Associated Waters (Schalow Pond)**

I. PROPOSAL

A. Justification for Proposed Rehabilitation

1-2. Fish Lake, located in north-central Okanogan County, is a medium sized lowland lake of exceptional aesthetic appeal. In years past, it has been an excellent producer of rainbow trout 10"-12". More recently, the lake has received an illegal plant of smallmouth bass, which has caused the trout catch to decline both in numbers and size.

When competing species are controlled, Fish Lake is capable of producing excellent quality trout fishing through June. The lake receives 35,000 rainbow trout fingerlings from Omak Hatchery annually in the spring, as well as 100-200 brood rainbow (2+ pounds/each). There have been many inquires from the public on the decline of the trout fishery in Fish Lake, as evidenced by the lack of yearling fish in the catch. The abundance of multiple age classes of smallmouth bass, coupled with the decline in size for yearling trout, makes a rehab necessary to prevent a total crash in the fishery.

3. Primary management of these waters is for trout only.

4. Lake rehabilitation with rotenone was a successful management tool for Fish Lake and associated waters (Schalow Pond) in 1996.

B. Physical Description of Waters Proposed for Rehabilitation

1. WATER: Fish Lake
2. LOCATION: Sec 16, T36N, R25E, Okanogan Co.
3. SURFACE ACRES: 100
4. MAX. DEPTH: 59
5. VOLUME: 2,936 acre feet 1,146,300,000 lbs
6. OUTLET: Outflow is dry except for intermittent spring runoff into Schalow Pond.
7. STREAM: MILES N/A FLOW (cfs)
8. PUBLIC ACCESS: Boat launches at both ends of lake in addition to campgrounds.
9. LAND OWNERSHIP: Public 100%; Private 0%;
10. ESTABLISHED RESORTS: none

1. WATER: Schalow Lake
2. LOCATION: Sec 16, T36N, R25E, Okanogan Co.
3. SURFACE ACRES: 10
4. MAX. DEPTH: 10
5. VOLUME: 50 acre feet 19,521,000 lbs
6. OUTLET: Control structure with damboards/outlet dry at present
7. STREAM: MILES N/A FLOW (cfs)
8. PUBLIC ACCESS: Hike in only
9. LAND OWNERSHIP: Public 100%; Private 0%;
10. ESTABLISHED RESORTS: none

C. Proposed Management Actions

1. WATER: Fish Lake
2. TARGET SPECIES: smallmouth bass
3. DATE LAST REHABED: October 1996
4. PROPOSED TREATMENT DATE: October 2004

5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 10,000 plus 35,000 fingerling rainbow
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 11,463 lbs., 30 gal.
9. METHOD OF APPLICATION: outboards - tow sack; pumper boat - slurry and spray
10. CREW DESCRIPTION: Leader(s) Robert Jateff, Personnel 8-10

1. WATER: Schalow Pond
2. TARGET SPECIES: smallmouth bass
3. DATE LAST REHABED: October 1996
4. PROPOSED TREATMENT DATE: October 2004
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 1500 fingerling rainbow
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 195 lbs., 5 gal.
9. METHOD OF APPLICATION: small boat with tow sack, ATV with spray (pond drawdown)
10. CREW DESCRIPTION: Leader(s) Robert Jateff, Personnel 2-4

II. PURPOSE:

Fish Lake has been managed as trout production water since the 1950's. Complete rehabilitation is the most desirable method in restoring the lake to a trout only fishery.

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

Complete removal of bass is the goal, and the only realistic action that the management objectives stated in section II can be achieved. Success of this measure will be apparent during annual creel surveys. Given a good chance of eliminating the populations of undesirable species, the beneficial effects should be lasting. Future rehabs will be necessary to maintain the fishery, if bass continue to be illegally introduced.

IV. RESOURCE IMPACTS:

1. Target species: smallmouth bass

2. District and Regional Habitat, Wildlife and Non-Game biologists have been apprised of our rehabilitation plans. No objections were raised, and only cautionary concerns were expressed on the potential impacts to non-targeted species.

According to Bradbury (1986), the effects of rotenone on benthos are variable, depending on the concentrations and species. Crustaceans are most tolerant while the smaller insects are most affected. Immediate reduction of populations averages 25%, and survival doubles when access to bottom sediments exists. Benthic communities generally recover to at least pretreatment levels within two months. Zooplankton is more severely impacted, and communities generally take two to twelve months to fully recover. While relatively tolerant of even heavy doses of rotenone, amphibians (especially larval) are at risk, and herptiles are affected somewhat less so. Almost no chance of eliminating an entire population exists.

3. The water is used for recreation and limited irrigation. Treatment will occur after irrigation ceases and when recreational use is at a minimum. However, due to recent drought conditions, irrigation has not occurred for the last three years.

4. Professional biologists and other naturalists have visited this site frequently over the past 50 years. To our knowledge, no endemic, rare, threatened or otherwise listed species will be negatively impacted by the rehabilitation. Nesting loons at Blue Lake, north of the treatment area, sometimes use Fish Lake as a feeding ground.

V. MITIGATING FOR ADVERSE IMPACTS:

1. Trout survival and growth will be greatly enhanced. No removal of dead fish is planned as the nutrient base contained therein is best returned to the lake. Disturbance of waterfowl during treatment or by the anticipated fishery will be offset by increased food availability as the uncontrollable numbers bass are eliminated in favor of easily balanced populations of trout. It is in the interest of all species being managed to refrain from over-taxing the food-base.

2. The lake will be at its lowest level in the late fall. No outlet exists or inlet exists during these times.

3. Protective gear for the eyes, face, hands and clothing will be supplied on-site for all purveyors of rotenone.

4. The lake will be posted according to Department of Ecology guidelines to notify the public of the treatment and discourage the public from possessing or consuming dead fish. The landowners will be notified of the rehabilitation and consequent exposure of livestock to rotenone.

5. Treatment will be done in the fall when the loon chicks have fledged are likely to not be in the general vicinity. Fish plants in the following spring will take advantage of the earliest possible date for planting to provide a continuation of the food chain for the loon population in the area. Both fingerlings and catchable trout will be planted at that time.

VI. RECREATIONAL IMPACT: also see I.A., II and III

Recreational angling opportunity will be increased if the smallmouth bass are removed from Fish Lake. Catchable trout will be planted the spring following the rehab, which will provide a fishery until the fingerling plants take hold. The fishery will crash if there is no action taken to eliminate the undesirable species.

VII. ECONOMIC IMPACTS:

The cost of treatment is about $20,000.00, which is recovered with profit within the first year after treatment. Since time may be required for the fishery to rebound after such a brief climax, the breakeven point may require two years.

VIII. RELATED MANAGEMENT ACTION:

Following treatment in October 2004 the goal is to release about 10,000 catchable rainbow trout in early April 2005, at which time the fingerling program will be back on schedule with the release of 35,000 rainbow trout.

## IX. PUBLIC CONTACT:

Public concern over the increasing numbers of lakes in Okanogan County with undesirable species infestations prompted this action.

A public meeting was held in Ephrata on July 7th to discuss the proposed treatment for Fish Lake, but there were no attendees. Letters were received from concerned citizens about the rehabilitations with responses sent back to them by department employees.

Initiated by: Region Two Fisheries Management

**Fish Lake and Associated Waters Management Plan**

**WATER MANAGEMENT PLAN**

**WATERS GENERAL INFORMATION SUMMARY**

Updated 7/30/04 by Bob Jateff

A. WATER:
1. Name: **Fish Lake**, County: **Okanogan**
2. Water type: Lake
3. Mucode: CDWWBT, Wacode: WRIA# 49, Str#, Sec 16-22 Twp 36 Rge 25E

B: PHYSICAL INFORMATION:
1. Elev: 1798, Ave Depth/Width: 28/648 feet, Max Depth: 59, Acres: 100
2. Physical Location: 4.5 miles northeast of Conconully
3. Land ownership: Public 100%, Private 0%
Land Use: Agricultural (Grazing) 50%, Residential 0% (nearshore homes 0), Managed Timberland 50%, Public Access: 100%, Unused Shoreline: 100%
4. Public Access Types and Condition: Campgrounds are located along the entire eastern shoreline. Boat launches and toilets are provided at the north and south ends. The northwestern shoreline also features camping areas and access to the water for small craft. Resorts: None
5. Inlets: Gibson Creek enters at the north end.
6. Outlets: Screen Y/N Unscreened control structure at the south end of the lake provides control of the lake level and outflow quantity. There is a small outlet pond (**Schalow**) that is connected to Fish Lake during high flows in the spring.
7. Habitat Description: Fish Lake is a medium sized, lowland lake of exceptional aesthetic appeal. It lies in a deep canyon in the transition between open foothills and mountainous forests. The lake level is stable. Littoral development is concentrated at the north end, where the main submergent plantlife is Chara. Emergent plants include bulrush on the east shoreline and cattails on the western shoreline.
8. Water Chemistry: Alkalinity ppm, Ca, pH, Specific Cond (micromhos)
9. Comments: Fish Lake is part of the Sinlahekin Wildlife Area, which is managed for diverse types of recreation by the Washington Department of Fish and Wildlife. It is a productive and popular fishery of statewide significance that features production fishing for 10-inch rainbow trout.

C. GENERAL MANAGEMENT INFORMATION

1. Current Regulations: Late April to October 31, 5 fish daily catch limit, two-day possession limit of 10 fish
2. Stocking: 35,000 rainbow trout fingerling annually in May
3. Fish species present: Rainbow trout
4. Anadromous Fish Use: None
5. Management History Summary: Since its inception, this fishery has been managed as a production fishery, owing to its medium size, productivity, and easy access. A few people have persisted in stocking the lake with smallmouth bass, requiring rotenone treatment at frequent intervals (last rehab in 1996).

Regulation History: Historically the lake opened on the traditional April opener and closed on July 31, to prevent double cropping of spring fingerling releases. In 1994 the closing date was delayed to September 30, when the fishing pamphlet underwent statewide standardization. The 2004 season opens on the last Saturday in April and closes on October 31st.

6. Management Issues Summary: Bird predation has not increased dramatically in Fish Lake compared to other area waters. Stockings of 35,000 fingerlings has remained the appropriate number to produce high densities of 10 inch trout for opening day and steady fishing through June.

Trout management (versus bass) is overwhelming endorsed by anglers. Moreover, nearby waters are managed for warmwater species and offer good fishing. A handful of bass-fishing proponents re-introduce bass following rehabs with impunity. WDFW must commit to end illegal introductions.

Should the common Loon, a candidate species for endangered or threatened listing, nest in Fish Lake (A nesting pair is now using nearby Blue Lake), wildlife biologists may oppose future rehabs. Successful intervention would yield a failed trout fishery. Fishery and wildlife biologists should now develop a mutually inclusive policy for such possibilities.

7. Reports (Bibliography): None

**PRE-REHABILITATION PLAN**
**Rat Lake and Associated Waters**

I. PROPOSAL

A. Justification for Proposed Rehabilitation

1-2. Rat Lake near Brewster, WA, is managed for a rainbow trout and brown trout fishery that is a winter bait fishery December through March, and a catch and release-selective gear fishery April through November. Angler interest for the selective gear fishery has increased directly with public awareness. It is likely the fishery will equal or surpass the effort of the winter bait fishery. The winter fishery probably supports about 50 angler trips per week. Most anglers for the winter fishery are local to north-central Washington. The catch and release season has a whole different following, with about half the anglers being local and the other half being out of area. Estimated effort for the new catch and release season is 25-50 angler trips per week.

The lake was rehabilitated in 1985 because of a stunted brown bullhead population that was severely impacting the crayfish and trout populations. Live catfish observed four days after treatment cast doubt as to its success.

Two 50 ft. gill nets, set over night on June 22, 1999, had 188 brown bullheads (6-8") and eight trout (rainbow and browns). The size of the brown bullheads indicated a stunted population and the thinness of the carryover trout indicated the catfish had severely reduced the crayfish population.

Rat Lake has a fairly clean precipitous shoreline. Most of the surrounding land is rangeland that is undeveloped except for a boat ramp and parking area. The time of treatment is particularly important for Rat Lake. Spring rehabilitation is optimal with the type of seasons offered at Rat Lake, but treatment needs to occur prior to active movement of the brown bullheads and spiny rays (if present) into the extensive marshes above the Rearing Pond (Mouse Lake). Inflow from the latter will be greatest in the spring, which will require additional rotenone, but optimal mixing will occur increasing chances for a complete kill. Inflow can be between 5 - 10 cfs, whereas outflow through seepage and leaks at the dam boards total 1.5 - 2.0 cfs. Toxicant will kill fish in Whitestone Creek down to the confluence with Swamp Creek. But, the dilution of the latter on the former ensures Whitestone Creek below the confluence is not impacted. Restocking of Whitestone Creek may be necessary unless potassium permanganate drip is available to inactivate the rotenone. The outfall to Rat Lake will probably be dry even during the spring due to severe drought conditions within the last three years, which should prevent any of the toxicant from getting into Whitestone Creek.

3. Primary management of these waters is for trout only.

4. Lake rehabilitation with rotenone was a mostly successful management tool for Rat Lake 18 years ago, which was the last time rehabilitation of this water, was necessary.

B. Physical Description of Water Proposed for Rehabilitation

1. WATER: Rat Lake and connecting waters (Mouse Pond)
2. LOCATION: Sec 22, T31N R24E, Okanogan Co.
3. SURFACE ACRES: 71
4. MAX. DEPTH: 71
5. VOLUME: 5,041 acre feet 8,276,000,000 lbs water
6. OUTLET: Whitestone Creek
7. STREAM: MILES N/A FLOW (cfs)
8. PUBLIC ACCESS: Public parking and boat launch

9. LAND OWNERSHIP: Public 5% WDFW; Private 95%;
10. ESTABLISHED RESORTS: None.

C. Proposed Management Actions

1. WATER: Rat Lake
2. TARGET SPECIES: brown bullhead catfish
3. DATE LAST REHABED: May 1985
4. PROPOSED TREATMENT DATE: April-May 2005
5. REPLANTING DATE: Late-spring 2005
6. SPECIES: rainbow trout and brown trout
7. CATCHABLES: 8,000 rainbow and 2,000 brown trout
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 3 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 26,000 lbs., 50 gal.
9. METHOD OF APPLICATION: outboards - tow sack; pumper boat - slurry and spray; ATV with sprayer; small boat with tow sack
10. CREW DESCRIPTION: Leader(s) Robert Jateff, Personnel 6-8

II. PURPOSE:

Rat Lake has been managed as lowland lake trout water since the 1950's. Complete rehabilitation is the only feasible method of restoring these waters to this type of management scheme. In addition, the crayfish population that can support quality trout has been diminished excessively from the heavy concentration of brown bullhead catfish.

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

We intend to restore Rat Lake to its popular harvestable trout fishery, and improve its popularity by maintaining quality trout for the spring catch and release season. Success of this measure will be apparent during annual creel surveys. Given a reasonable chance of eliminating the populations of undesirable species, the beneficial effects should be everlasting.

IV. RESOURCE IMPACTS:

1. Target species: brown bullhead catfish

2. District and Regional Habitat, Wildlife and Non-Game biologists have been apprised of our rehabilitation plans. No objections were raised, and only cautionary concerns were expressed on the potential impacts to non-targeted species.

According to Bradbury (1986), the effects of rotenone on benthos are variable, depending on the concentrations and species. Crustaceans are most tolerant while the smaller insects are most affected. Immediate reduction of populations averages 25%, and survival doubles when access to bottom sediments exists. Benthic communities generally recover to at least pretreatment levels within two months. Zooplankton is more severely impacted, and communities generally take two to twelve months to fully recover. While relatively tolerant of even heavy doses of rotenone, amphibians (especially larval) are at risk, and herptiles are affected somewhat less so. Almost no chance of eliminating an entire population exists.

3. Participation in the trout fisheries should exceed that currently found for existing fisheries, particularly since the new regulation cycle 2000-2001 allows for a catch and release season April

through November. Steep ridges surround most of the lake, and this coupled with the depth provide cold water even in the heat of summer. Its remote location within Whitestone Canyon, but easy and quick access from Brewster, make it aesthetically pleasing and angler use will increase if we continue to provide quality angling opportunity.

4. Professional biologists and other naturalists have visited this site frequently over the past 50 years. To our knowledge, no endemic, rare, threatened or otherwise listed species will be negatively impacted by the rehabilitation.

V. MITIGATING FOR ADVERSE IMPACTS:

1. Trout survival and growth will be greatly enhanced. No removal of dead fish is planned as the nutrient base contained therein is best returned to the lake. Disturbance of waterfowl during treatment or by the anticipated fishery will be offset by increased food availability as the uncontrollable numbers of spiny-rayed fishes are eliminated in favor of easily balanced populations of trout. It is in the interest of all species being managed to refrain from over-taxing the food-base.

2. Although the lake will be filling from snow pack run-off via Whitestone Creek, this can enhance mixing and increase success of complete kill.

3. No endemic, rare, threatened or otherwise listed species are known to inhabit this area.

4. Protective gear for the eyes, face, hands and clothes will be supplied on-site for all purveyors of rotenone.

5. The lake will be posted according to Department of Ecology guidelines to notify the public of the treatment and discourage the public from possessing or consuming dead fish. The landowners will be notified of the rehabilitation and consequent exposure of livestock to rotenone.

VI. RECREATIONAL IMPACT: also see I.A., II and III

Recreational angling opportunity will be increased if the brown bullhead catfish are removed from Rat Lake. The level of participation will dwindle to almost nothing if no action is taken immediately. Given the success of the planned management action, as many as 2,000 angler trips are estimated for the season. Anglers should average about five fish per trip on during the winter season. Yearling trout should average about 12 inches. Carryovers should be expected to be about 20 percent of the catch, and average 15 inches for 2-year-old fish.

VII. ECONOMIC IMPACTS:

Rehabilitation would restore the fishery and associated economic activity. An estimated 2,000 or more trips will be made to Rat Lake as a result of the proposed management action, with an economic impact totaling $75,800.00 per year (1991 dollars; based WDW estimate of $37.90 per trip). In calculating financial return to WDFW, not all anglers buy or pay full price for a license (kids and seniors assumed at 20%), many people fish more than one day (50% assumed), and some angler's don't purchase licenses exclusively for this lake (50% assumed). Using this formulation, license sales for this lake amount to roughly (400 licenses @ $22.00 each), for a net gain of $8,500.00 when subtracting the cost of the fry plants. Local businesses share the balance

of $67,000.00.

No treatment would still cost the agency $350.00 for fry plants, which would not survive to encourage fishing. This might produce 200 angler days, but would generate much less income for WDFW ($40.00) and local businesses ($7,500.00).

The cost of treatment is about $15,000.00, which is recovered within two years of treatment. Local economy is stimulated within the first year.

VIII. RELATED MANAGEMENT ACTION:

Approximately 8,000 catchable-sized rainbow and brown trout will be stocked in early spring following the rehabilitation to provide opportunity for the popular catch and release program. Creel checks will be done annually on both the harvest and catch and release seasons, and population surveys will be made, as time is available.

IX. PUBLIC CONTACT:

Public concern over the increasing numbers of lakes in Okanogan County with undesirable species infestations prompted this action.

A public meeting was held in Ephrata on July 7th to discuss the proposed treatment for Rat Lake, but there were no attendees. One letter was received voicing concern over the proposal, which was responded to by a department employee via phone. Another letter required a written response.

Initiated by: Region Two Fisheries Management

# LAKE MANAGEMENT PLANS
## Updated by Bob Jateff (7/30/04)

**Water(s):** Rat Lake and Associated Waters (Mouse Pond)

**Location:** Lake lies at the south end of Whitestone Canyon about 6 miles north of Brewster. Sec. 22 31N 24E Okanogan County, WA.

| Size: | Maximum Depth: | Volume: |
|---|---|---|
| 71 acres | 71 feet | 8,276,000,000 lbs. |

**Water Source:** subsurface seepage springs and snow pack run-off via Whitestone Creek.

**Outflow:** Inlet is from the Rearing Pond (Mouse Lake) and outlet is to Whitestone Creek (intermittent for flood control).

**Management History:** Rat Lake is an irrigation reservoir about six miles north of Brewster, WA. A dam was built prior to 1917, but the City of Brewster enlarged the dam a few years later for flood control. Irrigation use is minimal and the drawdown on Rat Lake is only a few feet. The lake is managed for trout fishing, with a split season on type to maximize angler use. Between December 1 and March 31 a trout fishery with statewide rules applies. Beginning April 1 and continuing through November 30, a catch and release with selective gear restrictions applies. Most fishing during the winter season occurs in December, before the road closes from snow accumulation, and in late February through March when access is restored. The additional opportunity offered through the catch and release season began in 2000.

Angler interest for the selective gear fishery has increased directly with public awareness. It is likely the fishery will equal or surpass the effort of the winter bait fishery. The winter fishery probably supports about 50 angler trips per week. Most anglers for the winter fishery are local to north-central Washington. The catch and release season has a whole different following, with about half the anglers being local and the other half being out of area. Estimated effort for the new catch and release season is 25-50 angler trips per week.

Rat Lake is stocked with 8,000 rainbow trout fry <100 fpp and 2,000 brown trout fingerlings <40 fpp annually in the spring. The lake also receives Eastern Brook trout that recruit from the naturally reproducing population in Mouse Lake via Whitestone Creek.

Rat Lake has been rehabilitated four previous times; 1958, 1970, 1974, and 1985. Shiners and carp were the target in 1958; spiny rays and catfish the target in 1970 and 1974; catfish the target in 1985. The 1970 effort was successful at eliminating all fish species, but locals were known to have restocked the lake with crappie and bass. The population explosion was remarkably fast, since survival of the 1973 fry plant was essentially zero. Recognizing the difficulty to maintaining a good trout fishery in the presence of vociferous spiny ray advocates, the season was changed to a winter one.

The brown bullhead population was likely not completely eliminated during the 1985 lake rehabilitation. Brown trout have been planted annually to help reduce the bullhead population and provide variety for trout anglers. Two 50 ft. gill nets, set over night on June 22, 1999, had 188 brown bullheads (6-8") and eight trout (rainbow and browns). The size of the brown bullheads indicated a stunted population and the thinness of the carryover trout indicated the catfish had severely reduced the crayfish population.

*T&E Flora and Fauna*: No known report exists of any threatened or endangered species habitually found in or near Rat Lake.

**Current Management Objectives:**
Continue to manage Rat Lake for trout fishing. December through March season, statewide rules. Five fish limit, no size restrictions. Provide at least four yearling and one carryover rainbow trout per angler trip for 450 angler trips per statewide rules season. April through November, catch and release - selective gear restrictions provide a catch rate of two fish per hour.

1. Fishery Objectives:

| | | | Number of Fish | | Exploit. | |
|---|---|---|---|---|---|---|
| Species | Type | Category | /hour | /Angler | Avg.Size | Rate |
| Trout | Winter | Statewide Rules | 1-2 | 4+ | 11+ inches | 80% 1+yr-old |
| | | | | 1+ | 14+ inches | 20% 2+yr-old |
| Trout | C/R | Selective Gear | 2 | 4+ | 11+inches | 80% 1+yr-old |
| | | | | 1+ | 14+inches | 20% 2+yr-old |

2. Angler use objective (# angler days): Winter fishery 450, C/R fishery 1,500

3. Stocking Objectives:

| | | Number of Trout Stocked | | | |
|---|---|---|---|---|---|
| Lake | Species | Total | /Acre | /pound | Planting Month |
| Rat | Rainbow | 8,000 | 112 | <100 | April |
| | Brown | 2,000 | 28 | < 60 | April |

E. Management Strategy:
- Plant rainbow and brown trout fry in early spring to maximize spring growth in the lake.
- Check yearling growth; should be about 11-12 inches, adjust stocking rate as necessary.
- Expect 80% loss of yearling fish by end of season due harvest and hooking mortality.
- Maintain about 15-20 percent of the catch at age 2+ years old, 14+ inch fish.
- Monitor angling activity and catch rates annually through intermittent creel checks.
- Monitor all fish species periodically by electrofishing or netting.
- Control undesirable fish species with rotenone when trout survival is inadequate to produce an acceptable fishery.

# PRE-REHABILITATION PLAN
## Silvernail Lake

I. PROPOSAL

A. Justification for Proposed Rehabilitation

1-2. Silvernail Lake is a small body of water near Oroville that provides a trout fishery for juvenile anglers under the age of 15. Recent introductions of largemouth bass, which are spawning along the shoreline, are competing with the trout for a limited food supply of aquatic insects. Rehabilitation is necessary now to eliminate the competition that the bass are having on the trout plantings.

3. Primary management of these waters is for trout only.

4. Lake rehabilitation with rotenone was a successful management tool for Silvernail Lake in 1987.

B. Physical Description of Water Proposed for Rehabilitation

1. WATER: Silvernail Lake
2. LOCATION: Sec 6, T40N R27E, Okanogan Co.
3. SURFACE ACRES: 6
4. MAX. DEPTH: 17
5. VOLUME: acre feet; 112,890,625 lbs water
6. OUTLET: Outflow is dry except for spring runoff.
7. STREAM: MILES N/A FLOW (cfs)
8. PUBLIC ACCESS: WDFW access road
9. LAND OWNERSHIP: Public 50%; Private 50%;
10. ESTABLISHED RESORTS: none

C. Proposed Management Actions

1. WATER: Silvernail Lake
2. TARGET SPECIES: largemouth bass
3. DATE LAST REHABED: 1987
4. PROPOSED TREATMENT DATE: October 2004
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 500 catchable and 20 brood rainbows
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 300 lbs., 20 gal.
9. METHOD OF APPLICATION: outboards - tow sack; pumper boat - slurry and spray; ATV with sprayer; small boat with tow sack
10. CREW DESCRIPTION: Leader(s) Robert Jateff, Personnel 2-4

II. PURPOSE:

Silvernail Lake has been managed as trout production water since the 1950's. Complete rehabilitation is the most desirable method in restoring the lake to a trout only fishery.

## III. INTENDED OUTCOME/MEASURE OF SUCCESS:

Complete removal of bass is the goal, and the only realistic action that the management objectives stated in section II can be achieved. Success of this measure will be apparent during annual creel surveys. Given a good chance of eliminating the populations of undesirable species, the beneficial effects should be everlasting.

## IV. RESOURCE IMPACTS:

1. Target species: largemouth bass

2. District and Regional Habitat, Wildlife and Non-Game biologists have been apprised of our rehabilitation plans. No objections were raised, and only cautionary concerns were expressed on the potential impacts to non-targeted species.

According to Bradbury (1986), the effects of rotenone on benthos are variable, depending on the concentrations and species. Crustaceans are most tolerant while the smaller insects are most affected. Immediate reduction of populations averages 25%, and survival doubles when access to bottom sediments exists. Benthic communities generally recover to at least pretreatment levels within two months. Zooplankton is more severely impacted, and communities generally take two to twelve months to fully recover. While relatively tolerant of even heavy doses of rotenone, amphibians (especially larval) are at risk, and herptiles are affected somewhat less so. Almost no chance of eliminating an entire population exists.

3. The water is used for recreation and limited irrigation. Treatment will occur after irrigation ceases and when recreational use is at a minimum. The treatment will be scheduled at the end of October 2004.

4. Professional biologists and other naturalists have visited this site frequently over the past 50 years. To our knowledge, no endemic, rare, threatened or otherwise listed species will be negatively impacted by the rehabilitation.

## V. MITIGATING FOR ADVERSE IMPACTS:

1. Trout survival and growth will be greatly enhanced. No removal of dead fish is planned as the nutrient base contained therein is best returned to the lake. Disturbance of waterfowl during treatment or by the anticipated fishery will be offset by increased food availability as the uncontrollable numbers bass are eliminated in favor of easily balanced populations of trout. It is in the interest of all species being managed to refrain from over-taxing the food-base.

2. The lake will be at its lowest level in the late fall. No outlet exists or inlet exists during these times.

3. Protective gear for the eyes, face, hands and clothing will be supplied on-site for all purveyors of rotenone.

4. The lake will be posted according to Department of Ecology guidelines to notify the public of the treatment and discourage the public from possessing or consuming dead fish. The landowners will be notified of the rehabilitation and consequent exposure of livestock to rotenone.

VI. RECREATIONAL IMPACT: also see I.A., II and III

Recreational angling opportunity will be increased if the largemouth bass are removed from Silvernail Lake. Catchable and larger brood rainbows will be planted in the spring to provide an immediate fishery for the juvenile-only pond.

VII. ECONOMIC IMPACTS:

The cost of treatment is about $525, and can be done by a small crew in a short amount of time. The real benefit will come from the increased use of the pond for fishing by juvenile anglers and the exposure that they will have to catching larger fish, which should translate into purchase of fishing licenses when they are older.

VIII. RELATED MANAGEMENT ACTION:

Following treatment in October 2004 the goal is to release about 500 legal and 20 brood rainbow trout in early April 2005.

IX. PUBLIC CONTACT:

Public concern over the increasing numbers of lakes in Okanogan County with undesirable species infestations prompted this action.

A public meeting was held in Ephrata on July 7th to discuss the proposed treatment for Silvernail Lake, but there were no attendees. The landowner was contacted about water withdrawals during the treatment and agreed to cease withdrawal until the toxicant has dissipated and neutralized.

Initiated by: Region Two Fisheries Management

**Silvernail Lake Management Plan**

## WATER MANAGEMENT PLAN

## WATERS GENERAL INFORMATION SUMMARY

Updated 7/30/04 by Bob Jateff

A. WATER:
1. Name: **Silvernail Lake**, County: **Okanogan**
2. Water type: Lake
3. Mucode: CDWWBT, Wacode: WRIA# 49, Str#, Sec 6 Twp 40 Rge 27E

B: PHYSICAL INFORMATION:
1. Elev, Ave Depth: 8 feet, Max Depth: 17, Acres: 6
2. Physical Location: 5 miles north of Oroville.
3. Land ownership: Public 50%, Private 50%
Land Use: Agricultural (Grazing) 0%, Residential 0%, Managed Timberland 0%, Public Access: 50%, Unused Shoreline: 100%
4. Public Access Types and Condition: WDFW access road is located at one end of lake. Private landowner has allowed access via road at other end of lake, which provides area for launching small boats. Resorts: None
5. Inlets: None
6. Outlets: unscreened outflow channel is dry except during extreme runoff periods.
7. Habitat Description: Hillsides are mostly sage and bitterbrush, with littoral areas of mostly cattails.
8. Water Chemistry: not known
9. Comments: Silvernail Lake is a juvenile-only lake, which provides a recreational fishery for juveniles under the age of fifteen.

C. GENERAL MANAGEMENT INFORMATION
1. Current Regulations: Year round, all gamefish, no minimum size, 5 fish daily limit, 10 in possession
2. Stocking: 500 catchable and 20 brood rainbow trout
3. Fish species present: rainbow trout, largemouth bass
4. Anadromous Fish Use: None
5. Management History Summary: Silvernail used to be managed similar to other lakes, but since 2002 has been designated as a juvenile-only water. The infusion of largemouth bass has prevented adequate growth, through competition, for the trout, causing a decline in fishing opportunity.

Regulation History: Silvernail is now open year round for all gamefish, but the real value lies in providing juveniles with an opportunity to get started in fishing.

6. Management Issues Summary: Trout management (versus bass) is overwhelming endorsed by anglers. Moreover, nearby waters are managed for warmwater species and offer good fishing. A handful of bass-fishing proponents re-introduce bass following rehabs with impunity. WDFW must commit to end illegal introductions.

7. Reports (Bibliography): None

# PRE-REHABILITATION PLAN
# North Potholes Reserve

## I. PROPOSAL

### A. Justification for Proposed Rehabilitation

Ponds within the North Potholes Reserve (NPR) were last treated with rotenone in Sept. 1981 to remove undesirable fish species including carp and provide the opportunity for a managed fish population of warm-water (spiny-ray) species to provide a sport fishery. Breeding and molting duck use increased dramatically post-treatment. Numbers of duck broods and molting adults peaked at very high levels in 1985-86 and declined annually to pre-treatment (very low) numbers by summer of 2003. Large numbers of carp were observed in waters of NPR by the mid-1990's. The dominance of carp is the likely cause of the dramatic decline in observed duck use.

Since 1981 and the last rotenone treatment, a breeding population of bullfrogs has also become established in the NPR. Bullfrogs are a serious threat to Northern Leopard Frogs, a state-endangered species. N. Leopard Frogs occupied the waters with the NPR through 2002. Leopard frogs were found in only 2 ponds in the area in 2002, and no leopard frogs were found during intensive surveys of the area in 2003. Further surveying is planned for this area between during July – Sept of 2004. The presence of bullfrogs is one likely factor in the extirpation of leopard frogs.

Warmwater fisheries, primarily bass, bluegill, and crappie, have also declined as carp invaded these waters. These fisheries are low-key, walk-in access, and creel information is very limited. However, angler use is checked sporadically, and few anglers have reported successful trips in recent years. The fisheries in the NPR drainage are managed around waterfowl management objectives with a February to October season.

### B. Physical Description of Water Proposed for Rehabilitation

1. WATER: **Potholes Reservoir within the North Potholes Game Reserve**
2. LOCATION: Sections 33 and 34, T19N, R27E and Sections 3,4,9, and 10, T18N, R27E. Grant Co.
3. SURFACE ACRES: 113 MAXIMUM DEPTH: 6 feet
4. VOLUME: 339 acre-feet 921,450,816 lbs H2O
5. OUTLET: None. Job Corps dike separates waters in the NPR from the main body of Potholes Reservoir.
6. STREAM: None FLOW: N/A
7. PUBLIC ACCESS: Entire Area.
8. LAND OWNERSHIP: PUBLIC 100% PRIVATE 0 %
9. ESTABLISHED RESORTS: None

### C. Proposed Management Actions

1. WATER: **Potholes Reservoir within the North Potholes Game Reserve**
2. TARGET SPECIES: carp and bullfrog larvae
3. DATE LAST REHABED: Sept. 1981
4. PROPOSED TREATMENT DATE: Oct. 2004
5. REPLANTING DATE: 2005 as fish are available; most salvaged from other waters
6. SPECIES: largemouth bass, bluegill, black crappie
7. CATCHABLES: na; FINGERLINGS: na
8. PROPOSED TOXICANT: Rotenone, liquid CONCENTRATION: 4 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 452 gal.
9. METHOD OF APPLICATION: helicopter and ground spray
10. CREW DESCRIPTION: leader – Jim Tabor + 4-5 personnel.

II. PURPOSE:

Rehabilitation of the NPR serves the purposes of fisheries, waterfowl, and endangered species management. Removal of carp will increase invertebrate production and enhance food availability for desired fish species, breeding and molting ducks, and other species of aquatic wildlife. Removal of bullfrog larvae will reduce competition and predation by bullfrogs on Northern Leopard Frogs and other native amphibians.

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

Random creel surveys and biological sampling, as well as public comment, will be the measure of success for fisheries objectives. Waterfowl surveys will be conducted in July (duck brood count), August (molting ducks), and Oct.-Jan. (monthly aerial surveys for migrant/wintering waterfowl). Surveys for determining the presence of leopard frogs and bullfrogs will be made during spring and summer. The complete elimination of carp from a system of this type is a challenge and certainly no certainty. Without a complete kill, at least 5 - 6 years of benefit would still be realized before rehabilitation is again necessary.

IV. RESOURCE IMPACTS:

1. The populations of the target species, carp and bullfrogs, will be severely and negatively impacted.

2. District and Regional Fisheries, Habitat, and Wildlife biologists support the proposed rehabilitation plans. The possible presence of leopard frogs was raised as this species has been documented to occur in the NPR in recent past and in nearby ponds. No leopard frogs were found during intensive surveys in the NPR in 2003 and 2004. The rehabilitation will benefit leopard frogs since it will decrease competition and predation on this species, especially from exotic bullfrogs, which also occur in the area. The

rehabilitation would occur in the late summer, when larval leopard frogs have already metamorphosed, but bullfrog tadpoles would be susceptible.

According to Bradbury (1986), the effects of rotenone on benthos are variable, depending on the concentrations and species. Crustaceans are most tolerant while the smaller insects are most affected. Immediate reduction of populations averages 25%, and survival doubles when access to bottom sediments exists. Benthic communities generally recover to at least pretreatment levels within two months. Zooplankton is more severely impacted, and communities generally take two to twelve months to fully recover. While relatively tolerant of even heavy doses of rotenone, amphibians (especially larvae) are at risk, and turtles are affected somewhat less so.

3. The fishery will be re-established again after treatment. Creating a successful fishery risks increased human use of the area and the associated impacts to habitat and wildlife. As mitigation, the area is closed to fishing from 1 day before the opening of waterfowl hunting season to 1 Feb. These waters are not a source of potable water for humans or livestock. The area will be closed to angling, and other recreational uses such as wildlife viewing will be curtailed during the planned period of treatment.

4. Professional biologists and other naturalists have visited this site frequently over the past 40 years. The WDFW Habitat and Wildlife Programs and PHS maps have been consulted. The NPR is used heavily by several species of wildlife. Use of the area by several wildlife species of concern has been documented. These species include:

| | |
|---|---|
| 1) American White Pelican | (State endangered, for breeding) |
| 2) Northern Leopard Frog | (State endangered) |
| 3) Bald Eagle | (State and Federal threatened) |

The planned treatment is expected to have no negative impact on any of these species, however. In fact, the treatment will have a neutral or positive impact on wildlife species of concern that use the area. White pelicans use the NPR primarily in late summer and fall, but do not nest in it. The Northern Leopard Frog would receive significant benefit as a result of the treatment, primarily as a result of reduction of bullfrog reproduction. Bullfrogs prey on leopard frogs and pose a serious threat to leopard frogs. Bald Eagle use of the NPR is restricted to winter roosting and feeding (Bald Eagles feed on waterfowl primarily). There is a winter Bald Eagle roost used by 20-30 eagles in the reserve. The area also contains a colonial nesting bird rookery where 1000-2000 Great Blue Herons, Black-crowned Night Herons, Common Egrets, and Double-crested Cormorants nest. During the waterfowl hunting season, the reserve is used by several thousand ducks and geese. None of these or other wildlife uses will be impacted in a negative way by the proposed rotenone treatment.

## V. MITIGATING FOR ADVERSE IMPACTS:

1. Survival and growth for all desired species of amphibians, waterfowl and warmwater fishes in the proposed waters will be greatly enhanced. Human disturbance resulting

from the fishery will be managed by limiting access to off-site parking areas to preserve the walk-in fishery, the area will continue to be closed to fishing during the waterfowl hunting season, and fishing from boats will continue to be prohibited. Waterfowl production and use by molting ducks will also be enhanced. Rehabilitation will be completed before the nesting season begins. The diverse habitat in the NPR is home to much and varied wildlife, all of which would benefit from the increased production after carp removal. Leopard frogs will benefit from the reduction of bullfrogs as a result of removing bullfrog larvae. No removal of dead fish is planned as the nutrient base contained therein is best returned to the lake.

2. No downstream resources exist. Water within the NPR is isolated from other water in the Potholes Reservoir by the Job Corps dike.

3. Endemic, rare, threatened or otherwise listed species known to inhabit this area will not be adversely affected by the proposed treatment.

4. Protective wear for the eyes, face and hands will be required for all purveyors of rotenone.

5. Ponds will be posted according to Department of Ecology guidelines to notify the public of the treatment and discourage the public from possessing or consuming dead fish.

6. Treated waters will be tested for liquid rotenone and inert carrier residues 24 hrs and one month after treatment is completed. Zooplankton populations will be monitored before treatment and six and 12 months post treatment.

## VI. RECREATIONAL IMPACT: ALSO SEE PROPOSAL I.A.

The increased number of ducks produced in the waters to be treated will be available to hunters. Little fishery currently exists, so angling opportunity will be greatly enhanced. Hard data is not available to accurately judge CPUE on these waters because a shortage of manpower prohibits surveying all the area year around lakes on a regular basis. Angling pressure is low key in this area, rather than intense and concentrated temporarily as on opening day waters. Recreational opportunity will be increased for both hunters and anglers.

## VII. ECONOMIC IMPACTS:

Given the discussion in part VI, expected economic value is also difficult to estimate. However, as recreational opportunity increases, so goes the flow of dollars. The number of waterfowl hunting trips would be expected to increase, but an estimate of the magnitude of the increase would be difficult to predict. For every 100 additional angling trips made to this area as a result of the proposed management action, a resulting

increased economic impact totaling $3,790 per year to the state's economy (1991 dollars; based WDW estimate of $37.90 per trip).

## VIII. RELATED MANAGEMENT ACTION:

NPR will be planted with bass, bluegill, and crappie following rehabilitation. Creel checks and population surveys will be made as time is available. See I.C.6. for fish stocking data.

## IX. PUBLIC CONTACT:

A public hearing was held on July 7, 2004 in Moses Lake to explain Region Two 2004-05 rehabilitation proposals, assess public opinion, and address local concerns. The announcement was provided to area papers and radio stations one week in advance of the meeting. The meeting was attended by the manager of the Columbia National Wildlife Refuge who was there to learn more about the proposals for lakes on the Refuge. No comments or concerns were advanced addressing the proposals for NPR.

With so many of the area's users living outside Grant County, actual percentages pro and con are difficult to obtain. Another public meeting to discuss statewide rehabilitation proposals was held in Olympia to accommodate the western Washington users. Public support may be best judged by the number of participants in the area's wildlife and fishery opportunities (vis a vis Recreational Impacts).

Initiated by: Region Two Wildlife and Fisheries Management

# LAKE MANAGEMENT PLANS

Updated July, 2004 - J.W. Korth and J. Tabor

## Water(s): North Potholes Game Reserve (northern part of Potholes Reservoir)

**Description:** Potholes Wildlife Management Area, Sections 33 and 34, T19N, R27E and Sections 3,4,9, and 10, T18N, R27E. Approximately 6 miles southwest of Moses Lake, Grant County, WA

| Size: | Maximum Depth: | Volume: |
|---|---|---|
| 13 surface acres | 6 feet | 339 acre feet |

OUTLET: None. Job Corps dike separates waters in the NPR from the main body of Potholes Reservoir.
INLET: none **Water Source: Potholes Reservoir**

**Management History:** The water proposed for treatment is a peripheral part of Potholes Reservoir and is within the North Potholes Game Reserve (NPR). Surface water in the treatment area is isolated from the remainder of Potholes Reservoir by the 'Job Corps' dike that was constructed in the 1970's. The purpose of the dike was to allow management of warm-water (spiny-ray) fish species to provide an enhanced fishery. Management consisted primarily of removing carp and other undesirable fish species and re-stocking with desirable species (largemouth bass and bluegill). In the 1980's ?, three internal dikes were constructed to 'fine-tune' the isolation for more precise management.

All water proposed for treatment is within the NPR. This game reserve was established in the mid-1970's primarily to provide sanctuary for waterfowl during the waterfowl hunting season. The reserve has been very successful in this function. Several thousand ducks and geese (peak numbers have been near 100,000) typically rest in the reserve during the waterfowl hunting season. These ducks and geese provide hunting opportunity in the surrounding area when they leave the reserve to feed.

In addition to the use by waterfowl during the hunting season, the NPR is used heavily during other periods of the year and by a wide variety of wildlife species. One of the more prominent wildlife uses of the NPR is nesting by colonial nesting birds. The NPR contains a large rookery for four species of colonial nesters. In 1997, the rookery contained 1702 nesting pairs of Great Blue Herons, Black-crowned Herons, Common Egrets, and Double-crested Cormorants. Although the number of nesting pairs using the rookery has not been estimated since 1997, incidental observations indicate that the number has increased above that of 1997 . The use by colonial nesters is likely the result of limited human disturbance and the presence of large trees in the area.

Another of the more significant wildlife uses of the NPR is by breeding and molting ducks. Breeding and molting duck use increased dramatically after rotenone treatment to remove carp in 1981. Numbers of duck broods and molting adults peaked at very high levels (at least 200-300 broods and 500-1000 molting ducks) in 1985-86, but declined annually to pre-treatment (very low) numbers by summer of 2003. Large numbers of carp were observed in waters of NPR by the mid-1990's.

The focus of wildlife management in the NPR has been to insure sanctuary to maximize use by ducks and geese during hunting season, minimize human disturbance of colonial nesting birds and breeding and molting ducks, and promote wildlife observation that does not result in negative impact to wildlife use.

Some of the more significant planned wildlife-related management actions in the NPR in the future include: 1) Maintaining sanctuary for ducks and geese during the waterfowl hunting season (e.g., retain the existing fishing closure during the waterfowl hunting season and frequent enforcement presence). 2) Minimizing human disturbance during the breeding period for colonial nesting birds and ducks (e.g., interpretive signs, fishing from a boat prohibited, no public motorized vehicle access). 3) Maximizing in-water food resources (i.e., invertebrates and submerged aquatic plants) for ducks (e.g., carp removal). 4) Minimizing human disturbance during the duck molting period in July and August (e.g., fishing from a boat prohibited and no public access within the area by motorized vehicles). 5) Promotion of wildlife viewing in a manner that minimizes human disturbance of wildlife (i.e., design and implement a watchable wildlife 'trail' and other facilities to support it in the area). 6) Implement management actions (e.g., bullfrog control and diking to isolate peripheral pond basins) to benefit the state-listed Northern Leopard Frog.

*T&E Flora and Fauna*: Professionals from many resource fields have visited this site countless times during the last 40 years. Use of the area by several wildlife species of concern has been documented. These species include:

| | |
|---|---|
| 1) American White Pelican | (State endangered, for breeding) |
| 2) Northern Leopard Frog | (State endangered) |
| 3) Bald Eagle | (State and Federal threatened) |

White pelicans use the NPR primarily in late summer and fall, but do not nest in it. N. Leopard Frogs occupied the waters with the NPR through 2002. Leopard frogs were found in only 2 ponds in the area in 2002, and no leopard frogs were found during intensive surveys of the area in 2003. Further surveying is planned for this area between during July – Sept of 2004. Bald Eagle use of the NPR is restricted to winter roosting and feeding (Bald Eagles feed on waterfowl primarily).

**Current Fishery Management Objectives and Strategy:**

- Manage for largemouth bass, crappie and bluegill.
- Season: February 1 – mid October (last day before hunting season opener)
- Statewide limits/size restrictions for all species.
- Provide low key, walk-in fishery (maybe 500 angler trips per year)
- Survey periodically (electrofishing, netting).
- Spot check angler use randomly during the year and assess periodically for presence of undesirable species.
- Continue rehabilitation with rotenone when populations of unwanted fish species become over-abundant.
- Re-stock as necessary with desired species salvaged from other area lakes.

**Current Wildlife Management Objectives and Strategy:**

Current wildlife-related management actions in the NPR include: 1) Maintaining sanctuary for ducks and geese during the waterfowl hunting season (e.g., hunting/trapping closure, fishing closure during the waterfowl hunting season). 2) Minimizing human disturbance during the breeding period for colonial nesting birds and ducks (e.g., fishing from a boat prohibited, no public motorized vehicle access). 3) Maximizing in-water food resources (i.e., invertebrates and submerged aquatic plants) for ducks (e.g., coordinating with Fish Management program for carp removal). 4) Minimizing human disturbance during the duck molting period in July and August (e.g., fishing from a boat prohibited and no public access within the area by motorized vehicles). 5) Promotion of wildlife viewing in a manner that minimizes human disturbance of wildlife.

# PRE-REHABILITATION PLAN
# Hampton Lakes Drainage, including the Pillar-Widgeon Lakes Chain
## on the Columbia National Wildlife Refuge in Grant County

## I. PROPOSAL

### A. Background and Justification for Proposed Rehabilitation

The Pillar-Widgeon chain of lakes, Hampton Lakes, and associated smaller waters and drainages are located on the Columbia Basin National Wildlife Refuge just south of Potholes Reservoir and about 6 miles northwest of Othello, Washington. Upper and Lower Hampton Lakes are the largest waters in the drainage and have been popular rainbow trout fisheries since the 1960's, attracting anglers statewide. Washington Department of Fish and Wildlife (DFW) surveys during the 1990's indicate approximately 45% of the anglers visit these waters from the westside of the state. The larger lakes of the Pillar-Widgeon chain also supported very good trout fisheries in the 1960-80's, but have since declined in popularity for several reasons. Other smaller waters in this portion of the drainage include Hen, Dabbler, Marie, and Hampton Slough. These waters are fairly shallow and are important to waterfowl management. Only Hen is open to fishing, though it produces very little recreation. All of the above mentioned waters are connected at various times, and all should be treated for an effective rehabilitation of the system.

Seasons have varied over the years. Originally, these waters were part of the general statewide opening day in late April. Upper and Lower Hampton, and the Pillar-Widgeon lakes were very heavily used at this time, and these lakes produced 4-8 rainbow trout per angler. In 1983, a March 1st regional opening day was instigated to reduce public pressure and the resultant habitat damage in the vicinity of these waters. Quite often inclement weather at this early date would curtail participation, and colder water or ice cover affected opening day harvest. During the late 1990's through 2002, a split season for the Pillar-Widgeon chain opened these waters for the months of March and September only to accommodate waterfowl management objectives. Participation and angler success was very difficult to judge during these seasons. The current season has been April 1st through September 30 since 2003, partly in accordance with Refuge desires and also in hopes of a more consistent angling experience.

Upper and Lower Hampton lakes have a long history of being managed for trout and together can account for 5,000 angling trips per season when trout fishing is prime. Refuge counts in 1987 show a high that year of 6,348 trips of which angling is estimated to account for 90% of the total. On opening day alone in 1988, Upper Hampton Lake accounted for 556 trips and 2,098 fish in the creel (3.7 fish/angler). Lower Hampton Lake hosted 206 trips and 752 fish were harvested (4.1 fish/angler) on the same day.

Undesirable species of fish have infiltrated the Hampton Lakes on several occasions over the years, most probably through illegal introductions by anglers. More recently, these species have been found in the waters of the Pillar-Widgeon chain. Warmwater, exotic species eventually out-compete or predate stocked trout fingerlings resulting in poor trout survival. Eventually these species over-populate, and very poor growth rates diminish the remaining fishery for those same

species. Species elimination or reduction is the most economical management strategy in these situations.

Crappie were successfully eliminated from Lower Hampton in 1973. Largemouth bass and pumpkinseed sunfish were illegally introduced to both Upper and Lower Hampton Lakes in the late 1980's, and trout fishing soon began to decline. On opening day 1991, only 239 anglers visited Upper Hampton, and harvest was only 68 fish (0.3 fish/angler). Lower Hampton had a mere 155 trips with 34 fish (0.2 fish/man). By 1992, Refuge counts decreased to 1,685 trips for the season. Both waters and the connecting drainage through Sago Lake upstream and Marie Lake downstream were rehabilitated in 1994. Pumpkinseed sunfish were again noted in the Hampton Lakes during the late 1990's. Yellow perch and carp are also known to have been introduced upstream of the Hamptons in the Pillar-Widgeon drainage. Once again, catch rates have been poor for the few anglers still participating in the fishery.

Almost all of DFW's creel data for these lakes comes from opening day creel checks. Thereafter, fisheries are judged on the basis of a few random checks and angler contacts. The inconsistencies in weather and its impacts on angling success during the almost 20 years of March 1st openers have made evaluation of these fisheries based on catch rates difficult. However, yearling fish size is a good indicator of fingerling survival. Larger than expected yearlings for a given stocking density usually means poor fingerling survival. Catch rates from 1984-88 averaged 3.2 fish per angler, and yearling size averaged 11.4 inches. From 1990 to 1994, anglers have only averaged 1.2 fish and the average yearling was 13.0 inches, a typical scenario due to the illegal introduction of largemouth bass to the lakes. Currently, spring-stocked fingerlings have grown to 13 to 14 inch yearling trout.

In addition to the presence of these undesirable fish species, avian predation has an impact on trout management in these lakes. In particular, Upper Hampton hosts hundreds of mergansers each winter until freeze-up. Upper Hampton has large springs that keep the lake open long after most other waters in the area have frozen over, and often Upper Hampton never has complete ice cover. A growing population of double-crested cormorants inhabits the area and also frequently visits the Hampton and Pillar-Widgeon lakes from March through October.

The cost for producing a mixed species fishery (trout and warmwater fishes) is an order of magnitude greater for the larger trout necessary to compete with other species. However, national refuge policy forbids planting catchable sized fish in Refuge waters. Current stocking strategy seeks to reduce competition by evenly splitting the stocked fingerlings between spring and fall. Yearling length is bimodal. The spring-stocked fingerlings are again 13 to14 inches in length, and the fall-stocked fingerlings barely make 8 inches in length. Optimistic estimates of survival for these 4-6 inch fish in larger mixed species waters range from 10-20%; survival is unknown in this situation.

Lastly, Refuge policy favors endemic species management over that of exotic species. While no fish inhabited these waters originally, rainbow trout have historically inhabited the Columbia River drainage including Crab Creek. Warmwater species were introduced west of the Rockies. Additionally, the Columbia Basin National Wildlife Refuge was chartered for the primary

purpose of waterfowl management, and crowded populations of small warmwater species of fish compete for the same food items as waterfowl.

**B. Physical Description of Waters Proposed for Rehabilitation, upstream to lower.**

1. WATER: **Pillar Lake**
2. LOCATION: Sec 19 T17N R29E Grant Co.
3. SURFACE ACRES: 9.7 MAXIMUM. DEPTH: 37 feet
4. VOLUME: 116 acre-feet WEIGHT OF WATER: 316,256,054 lbs H2O
5. INLET STREAM: subterranean flow, primarily from Potholes Canal; unk.cfs.
6. OUTLET STREAM: intermittent flow ~ 30 yards to Snipe Lake; < 1 cfs

1. WATER: **Snipe Lake**
2. LOCATION: Sec 19 T17N R29E Grant Co.
3. SURFACE ACRES: ~ 4 MAXIMUM. DEPTH: ~15 feet
4. VOLUME: ~ 60 acre-feet WEIGHT OF WATER: 163,088,640 lbs H2O
5. INLET STREAM: intermittent flow ~ 30 yards from Pillar Lake; < 1 cfs
6. OUTLET STREAM: perennial flow ~ 10 yards to Cattail Lake; < 1 cfs

1. WATER: **Cattail Lake**
2. LOCATION: Sec 19 T17N R29E Grant Co.
3. SURFACE ACRES: ~ 10 MAXIMUM. DEPTH: ~15 feet
4. VOLUME: ~ 150 acre-feet WEIGHT OF WATER: 407,721,600 lbs H2O
5. INLET STREAM: perennial flow ~ 10 yards from Snipe Lake; < 1 cfs
6. OUTLET STREAM: perennial flow ~ 10 yards to Poacher Lake; 1-2 cfs

1. WATER: **Gadwall Lake**
2. LOCATION: Sec 19 T17N R29E Grant Co.
3. SURFACE ACRES: 7 MAXIMUM. DEPTH: 59 feet
4. VOLUME: 96 acre-feet WEIGHT OF WATER: 262,029,080 lbs H2O
5. INLET STREAM: subterranean flow; unk.cfs.
6. OUTLET STREAM: perennial flow ~ 10 yards to Poacher Lake; 1-2 cfs

1. WATER: **Poacher Lake**
2. LOCATION: Sec 19 T17N R29E Grant Co.
3. SURFACE ACRES: ~1 MAXIMUM. DEPTH: ~10 feet
4. VOLUME: ~10 acre-feet WEIGHT OF WATER: 27,181,440 lbs H2O
5. INLET STREAM: perennial flow ~ 10 yards from Cattail (1-2 cfs) and ~ 10 yards Gadwall (1-2 cfs) lakes.
6. OUTLET STREAM: perennial flow ~ 10 yards to Shoveler Lake; 2-4 cfs

1. WATER: **Lemna Lake**
2. LOCATION: Sec 19 T17N R29E Grant Co.
3. SURFACE ACRES: ~2 MAXIMUM. DEPTH: ~10 feet

4. VOLUME: ~20 acre-feet WEIGHT OF WATER: 54,362,880 lbs H2O
5. INLET STREAM: subterranean flow; unk.cfs.
6. OUTLET STREAM: intermittent flow ~ 5 yards to Shoveler Lake; < 1 cfs

1. WATER: **Shoveler Lake**
2. LOCATION: Sec 19 T17N R29E Grant Co.
3. SURFACE ACRES: 8.4 MAXIMUM. DEPTH: 60 feet
4. VOLUME: 88 acre-feet WEIGHT OF WATER: 239,468,485 lbs H2O
5. INLET STREAM: intermittent flow ~ 5 yards from Lemna Lake (< 1 cfs) and perennial flow ~ 10 yards from Poacher Lake (2-4 cfs)
6. OUTLET STREAM: mostly subterranean, but intermittent surface flow ~ 5 yards to Widgeon Lake; < 1 cfs

1. WATER: **Sago Lake**
2. LOCATION: Sec 30 T17N R29E Grant Co.
3. SURFACE ACRES: 3.5 MAXIMUM. DEPTH: 30 feet
4. VOLUME: 50 acre-feet WEIGHT OF WATER: 134,944,298 lbs H2O
5. INLET STREAM: subterranean flow, primarily from Potholes Canal; ~ 1-2 cfs.
6. OUTLET STREAM: perennial flow ~ 20 yards to Hourglass Lake; 2 cfs

1. WATER: **Hourglass Lake**
2. LOCATION: Sec 30 T17N R29E Grant Co.
3. SURFACE ACRES: 2.3 MAXIMUM. DEPTH: 35 feet
4. VOLUME: 26 acre-feet WEIGHT OF WATER: 71,833,750 lbs H2O
5. INLET STREAM: perennial flow ~ 20 yards from Sago Lake; 2 cfs.
6. OUTLET STREAM: perennial flow ~ 20 yards to Widgeon Lake; 2 cfs

1. WATER: **Widgeon Lake**
2. LOCATION: Sec 30 T17N R29E Grant Co.
3. SURFACE ACRES: 8.8 MAXIMUM. DEPTH: 38 feet
4. VOLUME: 125 acre-feet WEIGHT OF WATER: 340,314,210 lbs H2O
5. INLET STREAM: perennial flow ~ 20 yards from Hourglass Lake (2 cfs) and intermittent flow from Shoveler Lake (< 1 cfs)
6. OUTLET STREAM: perennial flow ~ ¼ mile to Upper Hampton Lake; 3 cfs.

1. WATER: **Upper Hampton Lake**
2. LOCATION: Sec 30 T17N R29E Grant Co.
3. SURFACE ACRES: 68 MAXIMUM. DEPTH: 61 feet
4. VOLUME: 839 acre-feet WEIGHT OF WATER: 2,279,287,351 lbs H2O
5. INLET STREAM: perennial flow ~ ¼ mile from Widgeon Lake; 1–2 cfs.
6. OUTLET STREAM: perennial flow ~ 200 yards to Hen Lake, ~ 5 cfs;
intermittent flow ~ 10 yards to Upper Hampton Lake, < 1 cfs

1. WATER: **Lower Hampton Lake**
2. LOCATION: Sec 30,31 T17N R29E Grant Co.
3. SURFACE ACRES: 68 MAXIMUM. DEPTH: 46 feet
4. VOLUME: 472 acre-feet WEIGHT OF WATER: 1,282,152,398 lbs H2O
5. INLET STREAM: intermittent flow ~ 10 yards from Upper Hampton Lake, < 1 cfs
6. OUTLET STREAM: perennial flow ~ 10 yards to Hen Lake, ~ 3 cfs;
perennial flow ~ 5 yards to Hampton Slough, ~ 2 cfs

1. WATER: **Hen Lake** (estimated after water level lowered ~ 5 feet)
2. LOCATION: Sec 30 T17N R29E Grant Co.
3. SURFACE ACRES: 4 MAXIMUM. DEPTH: 15 feet
4. VOLUME: 69 acre-feet WEIGHT OF WATER: 186,437,497 lbs H2O
5. INLET STREAM: perennial flow ~ 200 yards from Upper Hampton Lake, ~ 5 cfs
perennial flow ~ 10 yards from Lower Hampton Lake, ~ 3 cfs
6. OUTLET STREAM: perennial flow ~ ¼ mile to Dabbler Lake, ~ 8 cfs

1. WATER: **Dabbler Lake**
2. LOCATION: Sec 31 T17N R29E Grant Co.
3. SURFACE ACRES: 10 MAXIMUM. DEPTH: 10 feet
4. VOLUME: 13 acre-feet WEIGHT OF WATER: 35,442,287 lbs H2O
5. INLET STREAM: perennial flow ~ ¼ mile from Hen Lake, ~ 8 cfs
6. OUTLET STREAM: perennial flow ~ 100 feet to Marie Lake, ~ 8 cfs

1. WATER: **Hampton Slough**
2. LOCATION: Sec 31 T17N R29E Grant Co.
3. SURFACE ACRES: 1 MAXIMUM. DEPTH: 6 feet
4. VOLUME: 3.4 acre-feet WEIGHT OF WATER: 9,296,052 lbs H2O
5. INLET STREAM: perennial flow ~ 5 yards from Lower Hampton Lake, ~ 2 cfs
6. OUTLET STREAM: perennial flow ~ ¼ mile to Marie Lake, ~ 2 cfs

1. WATER: **Marie Lake** (estimated after water level lowered ~ 6 feet)
2. LOCATION: Sec 31 T17N R29E Grant Co.
3. SURFACE ACRES: 3 MAXIMUM. DEPTH: 8 feet
4. VOLUME: 50 acre-feet WEIGHT OF WATER: 134,780,529 lbs H2O
5. INLET STREAM: perennial flow ~ ¼ mile from Hampton Slough, ~ 2 cfs
perennial flow ~ 100 feet from Dabbler Lake, ~ 8 cfs
6. OUTLET STREAM: none until lake refills; at full pool, perennial flow ~ 100 feet to Para Juvenile Lake, ~ 11 cfs

For **all** of the above listed waters and drainages:
7. PUBLIC ACCESS: Entire lakeshore public
8. LAND OWNERSHIP: PUBLIC 100%; Columbia National Wildlife Refuge PRIVATE 0 %
9. ESTABLISHED RESORTS: None

**C. Proposed Management Actions**

1. WATER: **Pillar Lake**
2. TARGET SPECIES: carp, possibly yellow perch
3. DATE LAST REHABED: September 25, 1981
4. PROPOSED TREATMENT DATE: October, 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 2-3,000 rainbow trout (~2-300/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm AMOUNT (ROTENONE AT 5% ACT. INGRED): 1,250 lbs., 20 gal.

1. WATER: **Snipe Lake**
2. TARGET SPECIES: yellow perch, possibly carp
3. DATE LAST REHABED: never rehabed
4. PROPOSED TREATMENT DATE: October, 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 800-1,200 rainbow trout (~2-300/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm AMOUNT (ROTENONE AT 5% ACT. INGRED): 700 lbs., 40 gal.

1. WATER: **Cattail Lake**
2. TARGET SPECIES: yellow perch, possibly carp
3. DATE LAST REHABED: never rehabed
4. PROPOSED TREATMENT DATE: October, 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 2-3,000 rainbow trout (~2-300/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm AMOUNT (ROTENONE AT 5% ACT. INGRED): 1,600 lbs., 50 gal.

1. WATER: **Gadwall Lake**
2. TARGET SPECIES: yellow perch, possibly carp
3. DATE LAST REHABED: October 9, 1986
4. PROPOSED TREATMENT DATE: October, 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 1,400-2,100 rainbow trout (~2-300/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm AMOUNT (ROTENONE AT 5% ACT. INGRED): 1,050 lbs., 50 gal.

1. WATER: **Poacher Lake**
2. TARGET SPECIES: yellow perch, possibly carp
3. DATE LAST REHABED: never rehabed

4. PROPOSED TREATMENT DATE: October, 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 200-300 rainbow trout (~2-300/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 110 lbs., 10 gal.

1. WATER: **Lemna Lake**
2. TARGET SPECIES: yellow perch, possibly carp
3. DATE LAST REHABED: never rehabed
4. PROPOSED TREATMENT DATE: October, 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 400-600 rainbow trout (~2-300/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 220 lbs., 10 gal.

1. WATER: **Shoveler Lake**
2. TARGET SPECIES: yellow perch, possibly carp
3. DATE LAST REHABED: October 9, 1986
4. PROPOSED TREATMENT DATE: October, 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 1,600 – 2,500 rainbow trout (~2-300/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 950 lbs., 50 gal.

1. WATER: **Sago Lake**
2. TARGET SPECIES: pumpkinseed sunfish, yellow perch, possibly carp
3. DATE LAST REHABED: October 26, 1994
4. PROPOSED TREATMENT DATE: October, 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 600 – 1,200 rainbow trout (~2-300/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 550 lbs., 30 gal.

1. WATER: **Hourglass Lake**
2. TARGET SPECIES: pumpkinseed sunfish, yellow perch, possibly carp
3. DATE LAST REHABED: October 26, 1994
4. PROPOSED TREATMENT DATE: October, 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 400 – 700 rainbow trout (~2-300/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm

AMOUNT (ROTENONE AT 5% ACT. INGRED): 300 lbs., 5 gal.

1. WATER: **Widgeon Lake**
2. TARGET SPECIES: pumpkinseed sunfish, yellow perch, possibly carp
3. DATE LAST REHABED: October 26, 1994
4. PROPOSED TREATMENT DATE: October, 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 1,800 – 2,700 rainbow trout (~2-300/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 1,350 lbs., 20 gal.

1. WATER: **Upper Hampton Lake**
2. TARGET SPECIES: pumpkinseed sunfish, yellow perch
3. DATE LAST REHABED: October 25 and 31, 1994
4. PROPOSED TREATMENT DATE: October 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 27,000 rainbow trout (400/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 2,260 lbs., 20 gal.

1. WATER: **Lower Hampton Lake**
2. TARGET SPECIES: pumpkinseed sunfish, yellow perch
3. DATE LAST REHABED: October 25 and 31, 1994
4. PROPOSED TREATMENT DATE: October 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 8,000 rainbow trout (400/acre)
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 1,270 lbs., 10 gal.

1. WATER: **Hen Lake**
2. TARGET SPECIES: pumpkinseed sunfish, yellow perch
3. DATE LAST REHABED: October 27, 1994
4. PROPOSED TREATMENT DATE: October 2004 - April, 2005
5. REPLANTING DATE: Spring 2005
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 1,200 rainbow trout
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 180 lbs.or 23 gal.

1. WATER: **Dabbler Lake**
2. TARGET SPECIES: pumpkinseed sunfish, yellow perch
3. DATE LAST REHABED: October 24, 1994

4. PROPOSED TREATMENT DATE: October 2004 - April, 2005
5. REPLANTING DATE: will not be restocked.
6. SPECIES: not applicable
7. CATCHABLES: 0 FINGERLINGS: 0
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm AMOUNT (ROTENONE AT 5% ACT. INGRED): 4.3 gal.

1. WATER: **Hampton Slough**
2. TARGET SPECIES: pumpkinseed sunfish, yellow perch
3. DATE LAST REHABED: October 24, 1994
4. PROPOSED TREATMENT DATE: October 2004 - April, 2005
5. REPLANTING DATE: will not be restocked.
6. SPECIES: not applicable
7. CATCHABLES: 0 FINGERLINGS: 0
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm AMOUNT (ROTENONE AT 5% ACT. INGRED): 20 gal.

1. WATER: **Marie Lake**
2. TARGET SPECIES: pumpkinseed sunfish, yellow perch
3. DATE LAST REHABED: October 24, 1994
4. PROPOSED TREATMENT DATE: October 2004 - April, 2005
5. REPLANTING DATE: will not be restocked.
6. SPECIES: not applicable
7. CATCHABLES: 0 FINGERLINGS: 0
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm AMOUNT (ROTENONE AT 5% ACT. INGRED): 16.5 gal.

For **all** of the above listed waters and drainages:
9. METHOD OF APPLICATION: pumper boats and slurry, airboat, canoe, and ATV with electric pumper spray will be used where suitable
10. CREW DESCRIPTION: Leader(s) Jeff Korth Personnel ~ 4-5

## II. PURPOSE:

The Hampton and Pillar-Widgeon lakes have a long history of being most successfully and economically managed as trout fisheries. Management intends to return these lakes to a trout fishery, as per the Management Plan established almost two decades ago. Rehabilitation will eliminate or drastically reduce interspecific competition and allow the trout fisheries to flourish.

The smaller, connecting waters have also been managed as trout fisheries in the past; however, trout production was marginal in these shallow waters. The Refuge manages most for waterfowl and requested further stocking of fish be curtailed in 2001. No effective barriers to fish migration separate these waters from the Hampton Lakes, and rehabilitation is necessary due to the high probability that any fish remaining in untreated, connected waters would quickly invade

the newly treated waters.

## III. INTENDED OUTCOME/MEASURE OF SUCCESS:

Success of this measure will be apparent as angler participation increases. Numbers of anglers and harvest estimates will be checked at opening day creel surveys. Opening day participation should be at least 500 trips with four fish average harvest per trip. Given a reasonable chance of eliminating the undesirable species and provided further illegal plants are curtailed, the beneficial effects would be interminable. Even if the undesirable species are not eliminated, or are reintroduced, the trout fishery will still benefit for at least 4-6 years. In addition to the reasons listed under Resource, Recreational and Economic Impacts, to abandon these lakes as trout fisheries is to invite other incursions across the state.

## IV. RESOURCE IMPACTS:

1. The populations of the target species, carp, pumpkinseed sunfish and yellow perch, will be severely and negatively impacted. According to Bradbury (1986), the effects of rotenone on benthos are variable, depending on the concentrations and species. Crustaceans are most tolerant while the smaller insects are most affected. Immediate reduction of populations averages 25%, and survival doubles when access to bottom sediments exists. Benthic communities generally recover to at least pretreatment levels within two months. Zooplankton is more severely impacted, and communities generally take two to twelve months to fully recover. While relatively tolerant of even heavy doses of rotenone, amphibians (especially larval) are at risk, and herptiles are affected somewhat less so. Almost no chance of eliminating an entire population of these species exists.

2. District and Regional Habitat, Wildlife and Non-Game biologists have been apprised of current rehabilitation plans. No substantial objections were raised, and only cautionary concerns were expressed on the potential impacts to non-targeted species.

3. The fishery has been severely diminished most years, but will be reestablished again one year after treatment. The lake will be closed to angling, and other recreational uses such as wildlife viewing will be curtailed during the planned period of treatment.

4. The Hampton lakes and associated waters intended for treatment are not a source of potable water for humans or livestock, nor are these waters used for irrigation; however, further downstream beyond the treated lakes, Morgan Lake is a source of potable water for livestock and is used for irrigation.

4. Professional biologists and other naturalists have visited this site frequently over the past 40 years. The WDFW Habitat and Wildlife Programs and PHS maps have been consulted, and to our knowledge, no endemic, rare, threatened or otherwise listed species will be impacted by the rehabilitation.

## V. MITIGATING FOR ADVERSE IMPACTS:

1. Trout fingerling survival and growth for all the proposed waters will be greatly enhanced, and future trout fisheries will attain their previous status. No removal of dead fish is planned as the nutrient base contained therein is best returned to the lake.

2. The last lake in the treated system, Marie, will be drawn down and should contain all treated water until detoxification occurs. Should Marie fill and draft treated water, there are two more lakes in the system downstream of Marie which would further dilute and detoxify any remaining rotenone in the water before reaching Morgan Lake. The ability to detoxify the outlet will also be available should circumstances prevent holding flows for the necessary period of time.

3. No endemic, rare, threatened or otherwise listed species are known to inhabit this area.

4. Protective wear for the eyes, face and hands will be required for all purveyors of rotenone.

5. Lakes will be posted according to NPDES permit guidelines to notify the public of the treatment and discourage the public from possessing or consuming dead fish. Access to these waters will be closed by a gate approximately 3/4 miles from the lakes to limit public contact with the application.

6. Waters treated with liquid rotenone will be tested for residues 24 hrs and one month after treatment is completed. Zooplankton populations will be monitored before treatment and six and 12 months post treatment.

## VI. RECREATIONAL IMPACT: ALSO SEE PROPOSAL I.A.

Recreational opportunity will be increased. Based on past use and accounting for increased demand, at least 5,000 recreation-days will be produced. Angler success should reach four fish per angler on opening day, and 3-4 fish thereafter. Yearling trout should average about 11 inches on opening day. Carryovers should be expected to be about 5-10% of the catch, and be at least 14 inches for 2-year-olds and 16 inches for 3-year-olds.

Fingerling plants are no longer an option for these lakes. Stocking catchables violates refuge policy. The only valid comparisons are with a warmwater or a mixed species fishery. If both lakes remain warmwater fisheries, less than 1,000 trips per season are estimated initially. This is roughly 20 % of the 5,000 trips per season produced by a good trout only fishery. Sunfish and perch eventually stunt in other lakes of similar size in this area, and angling interest wanes. Eventually these waters would only account for a few hundred trips per year.

## VII. ECONOMIC IMPACTS:

Current estimates of the decline in angling trips are complicated by the recent change in season; anglers have still to become accustomed to the April 1 opener. During 1991, 368 fewer trips were made to the Hampton lakes as compared to 1988. Economic impact due to lost recreation totals almost $14,000 per year for opening day alone (1991 dollars; based WDW estimate of $37.90 per trip). Using angler days estimated for the Hampton lakes when the trout fishery is in its prime, that fishery had an annual value of almost $190,000 to the state's economy. The fishery as it now exists generates far less as participation decreases with the declining trout catch. Rehabilitation should bring back the fishery and associated economic activity.

The total annual cost to Columbia Basin Hatchery to plant these lakes with 35,000 rainbow fingerlings is $3,115. The cost of planting with advanced fry, which are necessary to compete in a mixed species water, is $13,720. These rehabilitations will cost the Department conservatively $20,000 (including costs of rotenone, time, travel, etc.). If rehabilitations occur every four years, the cost of fingerling plants (4yrs.) and the rehab totals $32,460.

Maintaining a mixed species fishery and planting advanced fry (planted in the fall, rather than spring) every year for four years would cost almost $54,880, with as yet unknown results. Hatchery space and water are fully utilized in accomplishing the current area program, and other waters would suffer cutbacks if greater numbers of larger fish were to be raised. In addition, department time and equipment dollars to manage this type of fishery may be considerable in the long term.

## VIII. RELATED MANAGEMENT ACTION:

Hampton and Pillar-Widgeon lakes will be planted with rainbow trout fingerlings following rehabilitation. Creel checks and population surveys will be made on opening day and as time is available See I.C.6. for fish planting data.

Increased penalties and enforcement activities are desirable if WDFW is ever going to dissuade illegal stocking of state managed waters. Educating the public about the costs in Department dollars and time with emphasis on what WDFW might be able to accomplish with those resources would be a very worthwhile activity. This may result in stemming recruitment to this ill advised group and turning local opinion against the offenders.

## IX. PUBLIC CONTACT:

A public hearing was held on July 7, 2004 in Moses Lake to explain Region Two 2004-05 rehabilitation proposals, assess public opinion, and address local concerns. The announcement was provided to area papers and radio stations one week in advance of the meeting. The meeting was attended by the manager of the Columbia National Wildlife Refuge who was there to learn more about the proposals for lakes on the Refuge. No adverse comments or concerns were advanced addressing the proposals for Hampton Lakes. DFW biologists agreed to work closely

with the Refuge as the treatment time approached and the rehabilitation proceeded.

With approximately 75% of the lake's users living outside Grant County, actual percentages pro and con are difficult to obtain. Another public meeting to discuss statewide rehabilitation proposals was held in Olympia to accommodate western Washington anglers. Public support may be best judged by the number of participants in the fishery (vis a vis Recreational Impacts).

Initiated by: Region Two Fisheries Management

## LAKE MANAGEMENT PLANS

updated July, 2004 - J.W. Korth

Water(s): **Hampton Lakes Drainage, including the Pillar-Widgeon Lakes**

**Location:** Columbia National Wildlife Refuge, Sec 19 and 30 T17N R29E Grant County, WA; approximately 6 miles north northwest of Othello and approximately 4 miles south southeast of the mid-point of O'Sullivan Dam and Potholes Reservoir.

**Physical Description of Waters, upstream to lower.**

1. WATER: **Pillar Lake**
SURFACE ACRES: 9.7 MAXIMUM. DEPTH: 37 feet VOLUME: 116 acre-feet
INLET STREAM: subterranean flow, primarily from Potholes Canal; unk.cfs.
OUTLET STREAM: intermittent flow ~ 30 yards to Snipe Lake; < 1 cfs

2. WATER: **Snipe Lake**
SURFACE ACRES: ~ 4 MAXIMUM. DEPTH: ~15 VOLUME: ~ 60 acre-feet
INLET STREAM: intermittent flow ~ 30 yards from Pillar Lake; < 1 cfs
OUTLET STREAM: perennial flow ~ 10 yards to Cattail Lake; < 1 cfs

3. WATER: **Cattail Lake**
SURFACE ACRES: ~ 10 MAXIMUM. DEPTH: ~15 feet VOLUME: ~ 150 acre-feet
INLET STREAM: perennial flow ~ 10 yards from Snipe Lake; < 1 cfs
OUTLET STREAM: perennial flow ~ 10 yards to Poacher Lake; 1-2 cfs

4. WATER: **Gadwall Lake**
SURFACE ACRES: 7 MAXIMUM. DEPTH: 59 feet VOLUME: 96 acre-feet
INLET STREAM: subterranean flow; unk.cfs.
OUTLET STREAM: perennial flow ~ 10 yards to Poacher Lake; 1-2 cfs

5. WATER: **Poacher Lake**
SURFACE ACRES: ~1 MAXIMUM. DEPTH: ~10 feet VOLUME: ~10 acre-feet
INLET STREAM: perennial flow ~ 10 yards from Cattail (1-2 cfs) and ~ 10 yards Gadwall (1-2 cfs) lakes.
OUTLET STREAM: perennial flow ~ 10 yards to Shoveler Lake; 2-4 cfs

6. WATER: **Lemna Lake**
SURFACE ACRES: ~2 MAXIMUM. DEPTH: ~10 feet VOLUME: ~20 acre-feet
INLET STREAM: subterranean flow; unk.cfs.
OUTLET STREAM: intermittent flow ~ 5 yards to Shoveler Lake; < 1 cfs

7. WATER: **Shoveler Lake**
SURFACE ACRES: 8.4 MAXIMUM. DEPTH: 60 feet VOLUME: 88 acre-feet
INLET STREAM: intermittent flow ~ 5 yards from Lemna Lake (< 1 cfs) and perennial flow ~ 10 yards from Poacher Lake (2-4 cfs)
OUTLET STREAM: mostly subterranean, but intermittent surface flow ~ 5 yards to Widgeon Lake; < 1 cfs

8. WATER: **Sago Lake**
SURFACE ACRES: 3.5 MAXIMUM. DEPTH: 30 feet VOLUME: 50 acre-feet
INLET STREAM: subterranean flow, primarily from Potholes Canal; ~ 1-2 cfs.
OUTLET STREAM: perennial flow ~ 20 yards to Hourglass Lake; 2 cfs

9. WATER: **Hourglass Lake**
SURFACE ACRES: 2.3 MAXIMUM. DEPTH: 35 feet VOLUME: 26 acre-feet
INLET STREAM: perennial flow ~ 20 yards from Sago Lake; 2 cfs.
OUTLET STREAM: perennial flow ~ 20 yards to Widgeon Lake; 2 cfs

10. WATER: **Widgeon Lake**
SURFACE ACRES: 8.8 MAXIMUM. DEPTH: 38 feet VOLUME: 125 acre-feet
INLET STREAM: perennial flow ~ 20 yards from Hourglass Lake (2 cfs) and intermittent flow from Shoveler Lake (< 1 cfs)
OUTLET STREAM: perennial flow ~ ¼ mile to Upper Hampton Lake; 3 cfs.

11. WATER: **Upper Hampton Lake**
SURFACE ACRES: 68 MAXIMUM. DEPTH: 61 feet VOLUME: 839 acre-feet
INLET STREAM: perennial flow ~ ¼ mile from Widgeon Lake; 1–2 cfs.
OUTLET STREAM: perennial flow ~ 200 yards to Hen Lake, ~ 5 cfs;
intermittent flow ~ 10 yards to Upper Hampton Lake, < 1 cfs

12. WATER: **Lower Hampton Lake**
SURFACE ACRES: 68 MAXIMUM. DEPTH: 46 feet VOLUME: 472 acre-feet
INLET STREAM: intermittent flow ~ 10 yards from Upper Hampton Lake, < 1 cfs
OUTLET STREAM: perennial flow ~ 10 yards to Hen Lake, ~ 3 cfs;
perennial flow ~ 5 yards to Hampton Slough, ~ 2 cfs

13. WATER: **Hen Lake** (estimated after water level lowered ~ 5 feet)
SURFACE ACRES: 4 MAXIMUM. DEPTH: 15 feet VOLUME: 69 acre-feet
INLET STREAM: perennial flow ~ 200 yards from Upper Hampton Lake, ~ 5 cfs
perennial flow ~ 10 yards from Lower Hampton Lake, ~ 3 cfs
OUTLET STREAM: perennial flow ~ ¼ mile to Dabbler Lake, ~ 8 cfs

14. WATER: **Dabbler Lake**
SURFACE ACRES: 10 MAXIMUM. DEPTH: 10 feet VOLUME: 13 acre-feet
INLET STREAM: perennial flow ~ ¼ mile from Hen Lake, ~ 8 cfs
OUTLET STREAM: perennial flow ~ 100 feet to Marie Lake, ~ 8 cfs

15. WATER: **Hampton Slough**
SURFACE ACRES: 1 MAXIMUM. DEPTH: 6 feet VOLUME: 3.4 acre-feet
INLET STREAM: perennial flow ~ 5 yards from Lower Hampton Lake, ~ 2 cfs
OUTLET STREAM: perennial flow ~ ¼ mile to Marie Lake, ~ 2 cfs

16. WATER: **Marie Lake** (estimated after water level lowered ~ 6 feet)
SURFACE ACRES: 3 MAXIMUM. DEPTH: 8 feet VOLUME: 50 acre-feet INLET STREAM: perennial flow ~ ¼ mile from Hampton Slough, ~ 2 cfs
perennial flow ~ 100 feet from Dabbler Lake, ~ 8 cfs
OUTLET STREAM: none until lake refills; at full pool, perennial flow ~ 100 feet to Para Juvenile Lake, ~ 11 cfs

**Management History:**
The Pillar-Widgeon chain of lakes, Hampton Lakes, and associated smaller waters and drainages lie on the Columbia National Wildlife Refuge (CNWR) just south of O'Sullivan Dam and Potholes Reservoir. All of the above mentioned waters are connected at various times and are the upper portion of a tributary that eventually flows to lower Crab Creek. Most of these lakes are currently, and have been historically, managed as trout fisheries.

Upper and Lower Hampton Lakes are the largest waters in the drainage and have been popular rainbow trout fisheries since the 1960's, attracting anglers statewide. The larger lakes of the Pillar-Widgeon chain also supported very good trout fisheries in the 1960-80's, but have since declined in popularity for several reasons. Other smaller waters in this portion of the drainage include Hen, Dabbler, Marie, and Hampton Slough. These waters are fairly shallow and are important to waterfowl management. Only Hen is open to fishing, though it produces very little recreation.

Seasons have varied over the years. Originally, these waters were part of the general statewide opening day in late April. Upper and Lower Hampton, and the Pillar-Widgeon lakes were very heavily used at this time, and these lakes produced 4-8 rainbow trout at 11 inches average per angler. The lakes' were usually rapidly fished out in a few weeks, and the presence of hundreds of campers and day-trippers resulted in serious upland habitat damage, litter accumulation, and fire hazards. Waterfowl management, CNWR's mandate, also suffered.

In 1983, a March 1st regional opening day was instigated to reduce public pressure and the resultant habitat damage in the vicinity of these waters. Quite often inclement weather at this early date would curtail participation, and colder water or ice cover affected opening day harvest. Catch rates from 1984-88 averaged 3.2 fish per angler, and yearling size averaged 11.4 inches. On seasonably warm openers, however, Upper and Lower Hampton lakes could still account for over 5,000 angling trips per season when trout fishing is prime. Refuge counts in 1987 show a high that year of 6,348 trips of which angling is estimated to account for 90% of the total. On opening day alone in 1988, Upper Hampton Lake accounted for 556 trips and 2,098 fish in the creel (3.7

fish/angler). Lower Hampton Lake hosted 206 trips and 752 fish were harvested (4.1 fish/angler) on the same day. Washington Department of Fish and Wildlife (DFW) surveys during the 1990's indicate approximately 45% of the anglers visit these waters from the westside of the state. During the late 1990's through 2002, a split season for the Pillar-Widgeon chain opened these waters for the months of March and September only to accommodate waterfowl management objectives, particularly an attempt to increase waterfowl production in these waters. Participation and angler success was very difficult to judge during these seasons.

The current season has been April 1st through September 30 since 2003, partly in accordance with Refuge desires and also in hopes of a more consistent angling experience. The current catch limit is five fish, and bait is allowed. Only walk-in access access is available for all waters except Lower Hampton Lake, giving anglers at these lakes some degree of privacy and the potential for large fish.

The total annual stocking rate is approximately 40-50,000 rainbow trout, and stocking densities vary between 200 and 400 fish per acre. National refuge policy forbids planting catchable sized fish in Refuge waters. When undesirable fishes contaminate these waters, the stocking strategy seeks to reduce competition by evenly splitting the stocked fingerlings between spring and fall. Yearling length then becomes bimodal: the spring-stocked fingerlings are again 13 to14 inches in length, and the fall-stocked fingerlings barely make 8 inches in length. Optimistic estimates of survival for these 4-6 inch fish in larger mixed species waters range from 10-20%; survival is unknown in this situation. At the request of CNWR, Marie, Dabbler, Hampton Slough, and Dollar Lk (a small isolated water in the midst of the chain) are not stocked due to waterfowl and amphibian management objectives.

Undesirable species of fish have infiltrated the Hampton Lakes on several occasions over the years, most probably through illegal introductions by anglers. More recently, these species have been found in the waters of the Pillar-Widgeon chain. Warmwater, exotic species eventually out-compete or predate stocked trout fingerlings resulting in poor trout survival. Eventually these species over-populate, and very poor growth rates diminish the remaining fishery for those same species. Species elimination or reduction is the most economical management strategy in these situations.

Crappie were successfully eliminated from Lower Hampton in 1973. Largemouth bass and pumpkinseed sunfish were illegally introduced to both Upper and Lower Hampton Lakes in the late 1980's, and trout fishing soon began to decline. On opening day 1991, only 239 anglers visited Upper Hampton, and harvest was only 68 fish (0.3 fish/angler). Lower Hampton had a mere 155 trips with 34 fish (0.2 fish/man). By 1992, Refuge counts decreased to 1,685 trips for the season. From 1990 to 1994, anglers have only averaged 1.2 fish and the average yearling was 13.0 inches, a typical scenario due to the illegal introduction of largemouth bass to the lakes. Both waters and the connecting drainage through Sago Lake upstream and Marie Lake downstream were rehabilitated in 1994. Pumpkinseed sunfish were again noted in the Hampton Lakes during the late 1990's. Yellow perch and carp are also known to have been introduced upstream of the

Hamptons in the Pillar-Widgeon drainage. Once again, catch rates have been poor for the few anglers still participating in the fishery. Currently, spring-stocked fingerlings have grown to 13 to 14 inch yearling trout.

In addition to the presence of these undesirable fish species, avian predation has an impact on trout management in these lakes since the late 1980's. In particular, Upper Hampton hosts hundreds of mergansers each winter until freeze-up. Upper Hampton has large springs that keep the lake open long after most other waters in the area have frozen over, and often Upper Hampton never has complete ice cover. A growing population of double-crested cormorants inhabits the area and also frequently visits the Hampton and Pillar-Widgeon lakes from March through October. It is suspected that many of the unpredictable and unexplainable failures of the fisheries which occur periodically in most of the smaller lakes in the area could be attributable to these avian species. Trout survival for some lakes in the area appear to have benefited by stocking trout in the late October when fewer piscivorous birds are around.

Lastly, changes to the management of the Pillar-Widgeon chain of lakes has recently been contemplated. In the event that these waters can be ridded of undesirable species and consistent trout production becomes the norm, these waters would be good candidates for selective fisheries. The desired low key, walk-in fishery and scenery makes these waters attractive to anglers who would rather catch and release fish from numerous waters than harvest a limit.

*T&E Flora and Fauna*: Professionals from many resource fields have visited this site countless times during the last 40 years. No known report exists of any threatened or endangered species habitually found in or near these lakes. Occasional visits from both bald and golden eagles occur, although no nests of these two species are known in the area. Protected species of waterfowl and other birds frequently are found here at times, as well.

**Current Management Objectives:**
Regulations – April 1 to September 30; relatively low-key, production type fishery. Five fish limit, no size or gear restrictions.

1. Fishery Objectives:

| Species | Type | Category | Number of Fish /hour | Number of Fish /Angler | Avg.Size | Exploit. Rate |
|---|---|---|---|---|---|---|
| Rainbow | Prod | Opening day | 2 | 3 | 12 inches | 80% 1-yr-olds |

2. Angler use objective (# angler days): Season - 5,000-6,000

3. Stocking Objectives:

| Lake | Species | Number of Fish Stocked Total | Number of Fish Stocked /Acre | /pound | Planting Month |
|---|---|---|---|---|---|
| Pillar-Widgeon Lakes | Rainbow | 10-15,000 | 200-300 | <100 | April-May |
| Hampton Lks | Rainbow | 35,000 | 400 | <100 | April-May |

**E. Management Strategy:**
- Plant rainbow trout fingerlings in spring.
- Check yearling growth; should be about 12 inches, adjust stocking rate as necessary.
- Harvest 80% of yearling fish by end of season.
- Monitor all fish species periodically by electrofishing or netting
- Substitute fall fingerlings if avian predation is suspected of impacting trout fingerling survival.
- Control spiny-ray species with rotenone when trout survival is inadequate to produce an acceptable fishery.
- Work closely with the Refuge to coordinate fish and wildlife management objectives and practices.

PRE-REHABILITATION FORM

1. Water **Ellen Lake** Location **26&27** **T37N** **R36E** **Ferry County**
(Sec.) (Township) (Range) (County)

2. Surface Acres **82.4** Max. Depth **32ft** Volume(Wt) **44,800,000 ft3 , 2.8 billion #.**

3. Date Last Rehabilitated **1994** Toxicant Used **Rotenone**

4. Proposed Treatment Date **10/04** Est Replanting Date **4/05Fry25k**
**Legal 8.3k** Species **Rainbow**
5. Proposed Toxicant: **Rotenone**
Concentration **1ppm** Amount(at 5% act. ingred.) **2,900 #**
Method of Application **Dispense with rotenone slurry pumps**Target Species **LMB,**
Objective: Complete **X** Partial

6. Proposal for Salvage/Disposal **None**

7. Outlet: Permanent__Intermittent **X** Dry **X** Stream Miles/Flow
Measures to Protect Downstream Resources **None**
If None, Why **Dry in the fall** Type Detoxicant if Used
Duration of Beneficial Effects **10 yr**
8. Does Water Contain Rare, Endangered, or Endemic Species **No** . If So, Describe Measures for Protection

9. Public Access Yes Developed Campground/USFS Major Land Ownership (%)Public **100%** Private **0%** .

10. Established Resorts **None**

11. Is Water Used For Domestic, Industrial, or Irrigation (Registered Water Right) **No**

12. Public Attitude (Pro/Con %) Shoreside Residents
Non-Shoreside Residents___Sports Clubs___Public Meeting

13. Human Uses of Water **Fishing, swimming.**

14. Does Lake Suffer Algae Blooms **No** Winter or Summer Kills **No**

15. Justification For This Rehabilitation **The rainbow fishery**
**no longer exists. Largemouth bass competition and predation have eliminated the trout fishery.**

Curt Vail 05/13/04
Biologist Date

Region Number 1

# PRE-REHABILITATION PLAN

## I. PROPOSAL

### A. Justification for proposed Rehabilitation

1. Illegal introduction of largemouth bass has again destroyed the rainbow fry fishery at Ellen lake. Survival of fry for fisheries in 2002, 2003, and 2004 has declined to zero.
2. The lake was not stocked with fry in 2004. Only 4,449 catchables were planted in 2004.
3. Estimated loss of angling days could approach 1,800-2,000.

### B. Physical Description

1. Name of water: Ellen Lake
2. Location: Sec. 26&27 T37N R36E; Ferry County
3. Surface Acres: 82.4
4. Maximum depth: 32 ft.
5. Volume of water: 44,800,000 cu. ft./2,800,000,000 lbs.
6. Outlet statistics: No outlet.
7. Stream miles and flow: None
8. Number of developed public access acres/areas: 1/2.
9. Land ownership (%): public (100)
10. Established resorts: None

### C. Proposed Management Action

1. Date of last rehabilitation: October 1994.
   Toxicant used: Rotenone
3. Proposed treatment date: October 2004
4. Estimated replanting date: April 2005
5. Species to restock: Rainbow trout
6. Number of fry, legals to stock: 25,000 fry and 8,300 legals.
7. Proposed toxicant name, concentration, and amount: Rotenone, 1ppm, @ 2,900 lbs. at 5% and
8. Method of application: Pump rotenone slurrie with rotenone pump.
9. Size of crew and number of crew leaders: 1 - 2 boats and one crew leader.
10. Names of individuals on the crew who have pesticide application certifications: Curt Vail

## II. PURPOSE

Ellen Lake is a productive trout water that has been managed for rainbow trout since 1948. It is a very popular lake with local anglers but also serves at times up to 20% of opening day anglers from all over the state. Opening day angler participation has been very low.

## III. INTENDED OUTCOME/MEASURE OF SUCCESS

A 100% removal of bass is expected.

## IV. RESOURCE IMPACTS

1. Target species: Largemouth bass.
2. Detail impacts to other wildlife: The lake will be treated in October when waterfowl and other migratory animals have left the area. Amphibians and other animals will be going dormant or

moving to lower elevations for the winter months. Insect hatches will have subsided for the winter and other invertebrates will be at naturally low levels. By the time ice is off of the lake in the spring the lake will have detoxified and a normal progression biota development should occur.

3. Detail potential impacts to human related uses of water or shoreline: Impacts will be minimal because fishing is the primary use of the lake. The fish population will be so low by October that human activity will probably ben on-existant.

4. Describe potential impacts to downstream resources: None

5. List any endemic species, and/or species which are rare, endangered, threatened or otherwise listed: None

V. MITIGATING FOR IMPACTS

1. Describe how impacts can be mitigated, or softened: There is no swimming or other activity on the lake in October other than fishing. Cold water temperatures will result in most fish sinking as occured at the last treatment. There are no lake residents to be bothered by any fish that do not sink.

2. Describe measures to protect downstream resources: N/A

3. Describe measures to protect endemic species, and/or species which are rare, endangered or threatened: N/A

4. Describe the safety precautions for pesticied applicators that will prevent health hazards: Face protector, respirators and protective clothing will be required.

5. Describe how the area will be closed to public access during the rehabilitation: All public access points will be posted. Advanced notice will be published about the date of the rehab. If necessary, enforcement people will be rquested.

VI. RECREATION IMPACT

Increased fishing activity will be a positive impact of returning the lake to a trout fishery. A return to a high CPUE and possibly 1,800 to 2,000 angler days on the lake.

VII. ECONOMIC IMPACT

The fry program costs about $625.00 per year. Up to 2,000 angler days per year would generate as much as $80,000 to the local and adjacent economies.

VIII. About 8,000 legal rainbows will be planted in April of 2005. 25,000 fry will be planted in early may. These fry will recruit to the creel in 2006, when the lake should be at its best again.

IX. The USFS supports the rehabilitation. A public meeting will be held.

# PRE-REHABILITATION PLAN

I. PROPOSAL: Treat Rocky Lake with Rotenone.

A. Justification for proposed rehabilitation

1. Illegally introduced sunfish are destroying the trout fishery.
2. The lake was not stocked in 2003 or 2004.
3. Estimated loss of recreation is 1,000 angler days.

B. Physical Description

1. Name of water: Rocky Lake
2. Location: 3.5 miles S. of Colville WA
3. Surface acres: 20
4. Maximum depth: 28'
5. Volume of water: 300 acre ft.
6. Outlet statistics: No outlet
7. Stream miles:None
8. Number of developed access areas: One
9. Land ownership: 25% public, 75% private
10. Resorts: None

C. Proposed Management Action

1. Date of last rehabilitation: No record
2. Toxicant used: NA
3. Proposed treatment date: 10/2004
4. Estimated replanting date: 4/2005
5. Species to restock: Rainbow trout
6. Number of fry, legals to stock: 8k fry, 3.5k legals.
7. Proposed toxicant name, concentration, and amount: Rotenone, 1ppm, 850 #.
8. Method of application: Rotenone slurry pump.
9. Size of crew and number of crew members: boat and one crew of two.
10. Name of licensed applicator: Curt Vail

II. PURPOSE

Restore a popular local fishery in the Colville area.

III. INTENDED OUTCOME/MEASURE OF SUCCESS

One hundred percent removal of sunfish. Return to normal trout growth rate and condition

IV. RESOURCE IMPACTS

1. Target species: Pumpkinseed sunfish.
2. Detail impacts to other wildlife: None
3. Detail potential impacts to human related uses of water or shoreline: None
4. Describe impacts to downstream resources: None

5. List any endenic species, and or species which are rare, endangered or otherwise listed: None

V. MITIGATING FOR IMPACTS

1. Describe how impacts can be mitigated, or softened: Prior to 1971, Rocky Lake winterkilled annually. Any native species would not have survived. The lake also winterkilled twice between 1988 and 1995, despite the operation of a lake aerator.
2. Describe measures to protect downstream resources: None
3. Describe measures to protect endemic species, and/or species which are rare, endangered or threatened: None
4. Describe the safety precautions for pesticide applicators that will prevent health hazards: Respirators and protective clothing as prescribed by WDFW safety policy.
5. Describe how the area will be closed to the public during the application: The DNR public access and boat launch will be closed to the public and private waterfront will be posted.

VI. RECREATION IMPACT

Although sunfish can provide some recreation opportunity for juveniles, the rest of the fishery (trout) has disappeared. Residents are eager for the rehabilitation. Many more recreation days are provided by a trout fishery.

VII. ECONOMIC IMPACT

More fishing opportunity equals more economic benefit to the local economy.

VIII. STOCKING

Rainbow trout will be stocked in the spring of 2005. 8k fry and 3.5k legals for the 2005 season.

IX. PUBLIC MEETING

A public meeting will be held July 15, 2004.

PRE-REHABILITATION FORM

1. Water **Rocky Lake** Location **34 35N 38N Stevens**
(sec) (Twp) (Rge) (County)

2. Surface Acres **20** Max. Depth **28ft** Volume (Wt) **836.35x10#**
3. Date Last Rehabilitated **No record** Toxicant Used **NA**
4. Proposed Treatment Date **10/04** Est Replanting Date **4/05** Fry **8k**
Legal **3.5k** Species **Rainbow**
5. Proposed Toxicant **Rotenone**
Concentration **1ppm** Amount(at 5% act. ingred.) **850#**
Method of Application **Rotenone slurry pump** Target Species **sunfish**
Objective: Complete **X** Partial
6. Proposal for Salvage/Disposal **None**
7. Outlet: Permanent Intermittent Dry **X** Stream Miles/Flow
Measures to Protect Downstream Resources **None**
If None, Why **No outlet** Type Detoxicant if Used **NA**
Duration of Beneficial Effects **10 yr**

8. Does Water Contain Rare, Endangered, or Endemic Species **No** . If So, Describe Measures for Protection **None**

9. Public Access **yes** Developed **yes** Major Land Ownership (%)Public **25%** Private **75%** .

10. Established Resorts **None**

11. Is Water Used For Domestic, Industrial, or Irrigation (Registered Water Right) **No** .
**No intakes present in lake as of 7/02/04.**

12. Public Attitude (Pro/Con %) Shoreside Residents **100% pro**
Non-Shoreside Residents **Pro** Sports Clubs Public Meeting **To be held 07/15/04**

13. Human Uses of Water **Fishing, some swimming.**

14. Does Lake Suffer Algae Blooms **No Winter** or Summer Kills **yes**
**An aerator is run throughout the winter. An aerator was installed in 1971. Prior to 1971 the lake completely winterkilled every year. In two years between 1988 and 1995, it winterkilled twice.**

15. Justification For This Rehabilitation **Growing sunfish pop. negatively affecting trout fishery. Rainbow fry survival has been near zero for two years due to sunfish competition. The lake is managed with rainbow fry planted at 6 – 8,000 annually.**

**Curt Vail** **07/06/04**
Biologist Date

Region Number **1**

# NEWS RELEASE

**WASHINGTON DEPARTMENT OF FISH AND WILDLIFE**
600 Capitol Way North, Olympia, Washington 98501-1091
Internet Address: http://wdfw.wa.gov

June 30, 2004

Contacts: Jeff Korth, (509)754-4624, ext. 39
or Curt Vail, (509) 684-7452
or Jim Uehara, (360) 902-2738

## Proposed eastside fishing lake treatment to be discussed at July public meetings

Washington Department of Fish and Wildlife (WDFW) proposals to improve fishing and waterfowl reproduction through treatment of selected eastern Washington fishing lakes will be discussed at public meetings scheduled in July.

The meeting schedule is:

- **Ephrata**, Wednesday, July 7 at 7 p.m., in the annex conference room of WDFW's northcentral regional office, 1550 Alder St. N.W., to discuss treatment of Fish, Rat and Silvernail Lakes in Okanogan County and Hampton and Pillar-Widgeon chain of lakes (including Upper and Lower Hamptons, Hen, Dabbler, Marie, Pillar, Snipe, Cattail, Shoveler, Gadwall, Lemna, Poacher, Hourglass, Sago and Widgeon lakes) and the North Potholes Reserve in Grant County.

- **Colville**, Thursday, July 15 at 7 p.m., in the USDA/Stevens County Conservation District building, 230 Williams Lake Rd., just off Highway 395 northwest of Colville, to discuss treatment of Rocky Lake in Stevens County and Ellen Lake in Ferry County.

- **Olympia**, Thursday, July 22, at 7 p.m., in Room 172 of the Natural Resources Building, 1111 Washington St., S.E., to discuss all proposals.

All the lakes proposed for treatment have declining trout and/or other resident fish populations and some have declining waterfowl populations, due to competition or habitat impacts from infestations of other introduced or undesirable fish species.

Treatment of the lakes with rotenone, a natural chemical derived from a plant root that kills fish, allows for rejuvenation of fishing with more cost-effective stocking of trout fry. Waterfowl reproductive success also increases due to improved habitat.

The target species in the proposed lake rehabilitations are:

- Fish Lake (Okanogan County), largemouth bass
- Rat Lake (Okanogan County), brown bullhead
- Silvernail Lake (Okanogan County), pumpkinseed sunfish
- Hamptons and Pillar-Widgeon chain of lakes (Grant County), yellow perch and pumpkinseed sunfish
- North Potholes Reserve (Grant County), carp
- Rocky Lake (Stevens County), pumpkinseed sunfish
- Ellen Lake (Ferry County), largemouth bass

"These lake rehabs are just proposals at this time," explained WDFW district fish biologist Jeff Korth of Moses Lake. "Our meetings should give everyone interested a chance to learn about the procedure, ask questions, and make comments."

WDFW Fish Biologist Jim Uehara notes surveys of Washington anglers indicate trout fishing is preferred. The latest U.S. Fish and Wildlife Service recreation survey in 2001 showed that resident and non-resident anglers over 16 years of age spent almost $202 million on trout fishing trips alone in Washington.

Final approval of all proposed lake treatments across the state is slated for late August. Approved projects would get under way this fall or next spring.

###

July 16, 2004

**TO:** Jim Uehara, John Whalen

**FROM:** Curt Vail

**SUBJECT:** **ELLEN AND ROCKY LAKES REHAB. PUBLIC MEETING**

A public meeting was conducted on July 15th, 2004, to present the proposed rotenone treatments to the public and receive public comment. The meeting began at 7:00 P.M. and concluded at 9:00 P.M. Eleven people attended including Nancy Weller from DOE and myself.

I presented the case for the treatments and discussed the use of rotenone as well as the procedures which included restricted access to the treated waters and fish. Handouts of **Controlling Pests with Rotenone**, and **Better Fishing Through Management** were given to each participant.

A question and answer period lasted for about one-and-one-half hours. Of the nine public participants one was there only for the Rocky Lake treatment. She was in favor. One was there for general information and the rest were bass fishermen who were looking for any way to retain the bass in Lake Ellen. This is typical when bass have been in a trout-only water for too long. The rationale for retaining trout waters was explained; efficiency of trout fry plants, the small percentage of trout-only waters state-wide, the lack of hatchery capacity to provide catchables for an additional mixed species water, and the great popularity of Lk. Ellen as a trout water. You can guess that these reasons did not gain much acceptance. To their credit, they had no problem with the Rocky Lk. Treatment (no interest in pumpkinseeds?).

In general the meeting was low key and the public was respectful and willing to listen.

Larry Boshart
20904 86th Ave S.E.
Snohomish, Wash. 98296



Washington Department of Fish And Wildlife
Olympia, Wash.

Dear Sir:

Re: Proposed Lake Rehabilitation.

We the undersigned would like to express our strong support of the rehabilitation of Fish Lake in Okanogan County. Fish Lake is in need of rehabilitation due to the illegal introduction of bass which has ruined the lake for trout production. Fish Lake for years has been a premier trout lake and should be returned to its original capabilities of trout production. Rehabilitation of Fish Lake will also allow resumption of fry plants in the spring which are a much cheaper and a more cost effective means of stocking lakes. We would also encourage a review of the season length for Fish Lake and would propose ending the fishing season in early summer as a means to further protect fry and fingerlings as they mature for the following season.

We would also like to go on record as supporting the rehabilitation of lakes to support and improve trout survival and production. Trout fishing and the ability to catch and retain trout is preferred by the majority of anglers in this state. If anyone doubts it, just go out on opening weekend and see how many people turn out and how many are releasing fish! People want to catch fish and people want to take fish home for eating!

Rehabilitation with Rotenone has been used successfully for years without detrimental effects to birds and wildlife so we encourage its use until better or more cost effective means are developed.

We would also like to suggest that additional steps be taken to safeguard against the illegal introduction of other species in trout lakes. We would propose identifying a number of lakes in this state as trout only lakes. Let the public know that these lakes will be rehabilitated and maintained as trout only lakes and outlaw fishing for other species. The fishing regulations should restrict tackle in these lakes and outlaw use of tackle commonly associated with bass fishing. Fines for fishing with bass gear in these lakes should be substancial enough to provide for future rehabilitation, since those fishing for bass are likely those that planted them to start with.

Let's return this state to the trout fishing state it used to be and can be! Thank you for your time and consideration.

Sincerely, Larry O. Boshart

Signed in Support,

Larry O. Boshart
Tim Boshart
Lori W. Boshart
Thomas J. Boshart
Brian W. Boshart
Krystal Boshart

July 28, 2004

TO: Jim Uehara

FROM: Jeff Korth

SUBJECT: **Public comment on Region 2 2004-05 lake rehabilitations**

A public meeting was held on July 7, 2004 in Moses Lake to explain Region Two 2004-05 rehabilitation proposals, assess public opinion, and address local concerns. The announcement was provided to area papers and radio stations one week in advance of the meeting. For DFW, the meeting was attended by District 5 and 6 fisheries biologists and the District 5 wildlife biologist. The only other attendee was Bob Flores, manager of the Columbia National Wildlife Refuge, who was there to learn more about the proposals for lakes on the Refuge. No adverse comments or concerns were advanced addressing the proposed treatments for any of the lakes on the Refuge. Manager Flores favored doing the rehabilitations on the Refuge as benefiting waterfowl specifically and wildlife in general. Population reduction of exotic and undesirable species is also a Refuge goal, particularly where bullfrogs and carp are concerned. The assistance of refuge personnel was offered, and DFW biologists agreed to work closely with the Refuge as the treatment time approached and the rehabilitation proceeded.

One other comment was received by phone on July 26th concerning the treatment of the Pillar-Widgeon lakes. An angler from Yakima favored the rehabilitations in general, but thought treatment might be 2-3 years pre-mature on several waters (Snipe, Sago, Widgeon, and Shoveler were mentioned specifically). He understood that the waters in question are all managed as trout fisheries, interconnected with other waters in this chain, that these waters must be treated as a group for the rehabilitation to be effective, and the timing favors doing these treatments now as opposed to some other lakes. He primarily wanted to be sure DFW was aware that some fisheries were still viable among the group of lakes, but was satisfied that DFW's actions would be based on the best overall information available.

Two letter/e-mail responses were received opposing the treatment of Fish Lake. Both respondents favored bass and also were unhappy that no public meeting was held in the Okanogan. Responses sent reiterated DFW's intent to manage Fish Lake as a trout fishery, included information on angler preference surveys and rotenone treatments in general, and apologized for not being able to hold more public meetings, but assured the respondents that their comments would be accepted in the record and considered in the final decision.

One letter signed by seven respondents was also received favoring the Fish Lake rehabilitation.

One letter was received opposing the Rat Lake rehabilitation as premature. This angler was still able to catch large trout in Rat Lake. Typically, a relative few large trout will

remain some years past the time that no further fingerling recruitment occurs. However, the number of fish available is not enough to sustain the level of recreational opportunity usually accounted for by the lake's fishery. Further response?

**From:** "Morton, Sen. Bob" <MORTON_BO@leg.wa.gov>
**To:** "'Tom Davis'" <davistmd@dfw.wa.gov>
**Date:** 7/14/04 3:55PM
**Subject:** FW: REFERENCE POSSIBLE REHAB OF LAKES IN EASTERN WASHINGTON

Dear Tom:

Would you please assist me in responding to these complaints.

Thank you.

Cordially yours,

BOB MORTON
State Senator

-----Original Message-----
From: IVAN MOORE [mailto:windyhill76@MSN.com]
Sent: Sunday, July 11, 2004 8:35 PM
To: Morton, Sen. Bob
Subject: REFERENCE POSSIBLE REHAB OF LAKES IN EASTERN WASHINGTON

SENATOR MORTON:

I WOULD LIKE TO LIKE TO VOICE MY OPINION ON THE LISTING OF THE MEETING CONCERNING THE POSSIBLE REHAB OF THREE LAKES IN OKANOGAN COUNTY. A MEETING FOR INPUT INTO THE POSSIBLE REHAB OF FISH LAKE, RAT, AND SILVERNAIL LAKES WAS SCHEDULED FOR JULY 7TH IN EHPRATA AT 7 P.M. HOWEVER THERE IS NO WAY ANY OF THE PEOPLE OF OKANOGAN COUNTY WOULD BE ABLE TO ATTEND AS THE LISTING FOR THE MEETING DIDN'T COME OUT IN THE PAPER UNTIL THE 7TH OF JULY. NOW THEN IF THIS IS PROCEDURE FOR PUBLIC INPUT, THEN I BELIEVE THAT THE MEETING SHOULD BE PUBLICIZED SO THAT THE PUBLIC BE GIVEN AT LEAST TWO WEEKS PRIOR NOTICE. SECONDLY WHY AREN'T THE PUBLIC MEETINGS HELD IN THE COUNTY THAT IS EFFECTED. ALSO THEY LIST THE REASON THEY ARE GOING TO REHAB FISH LAKE IS BECAUSE OF AN UNDESIRABLE SPECIES OF FISH, NAMELY BASS. IF BASS IS LISTED AS AN UNDESIRABLE FISH AND NOT WANTED IN LAKES HABITAT BY TROUT THEN WHY IS THERE A LIMIT AS TO WHAT YOU CAN CATCH? SEEMS TO ME THAT SOME TIME AGO THERE WAS A STUDY ABOUT ROTENONE IS NOT HEALTHY TO OUR LAKES, BECAUSE IT DOESN'T DISSAPATE, IT SETTLES TO THE BOTTOM OF THE LAKE AND EVENTUALLY WILL KILL OTHER LIVING ORGANISMS. HOW CAN YOU POISON A LAKE THAT HAS A SERIES OF UNDERWATER SPRINGS? I AM SO TIRED OF HEARING ABOUT THE POOR TROUT. I AM AN AVID FISHERMAN AND I LIKE TO FISH VARIOUS WAYS DEPENDING ON WHAT IS IN THE LAKE. I FIND THAT THE REASON BEHIND THE TROUT IS ANYONE CAN CATCH A BUNCH OF FINGERLING PLANT, BUT IT TAKES WORK AND BRAINS TO CATCH A BASS. POUND FOR POUND THE BASS IS ONE FISH SPECIES WITH THE MOST FIGHT. WHAT CAN WE DO TO CHANGE THE NOTIFICATION PROCEDURE CURRENTLY USED BY GOVERNMENT AGENCIES WHEN HAVING TO ADVERTISE FOR PUBLIC INPUT? WE THE PUBLIC NEED AMPLE TIME TO PREPARE FOR ANY OF THESE MEETINGS.
THANK YOU FOR YOU CONSIDERATION AND MOST LOOK FOR INPUT ON THIS MATTER. ALL WE WANT IN OUR COUNTY IS A FAIR AND UNBIASED TREATMENT BY THE DEPARTMENT OF FISH AND WILDLIFE.
YOU HAVE MY PERMISSION TO FORWARD THIS ON THE DEPARTMENT OF FISH AND WILDLIFE.

windyhill76@MSN.com <mailto:windyhill76@MSN.com>

IVAN D. MOORE
59A COPPLE RD
OMAK, WA 98841

July 21, 2004

Mr. Ivan Moore
59A Copple Rd.
Omak, WA 98841

Dear Mr. Moore,

The Washington Department of Fish and Wildlife realizes there was difficulty in ensuring timely and accessible notification for all citizens interested in the proposed lakes for rehabilitation. One public meeting was held per region, as well as in the main agency office within Olympia. Acknowledging citizens receive information through various forums, public release notices identifying the July 7th public meeting in Ephrata, July 15th public meeting in Colville and July 22nd public meeting in Olympia were provided to all area newspapers, as well as radio stations on 30 June. As you know, the only daily newspaper covering North Central Washington is the Wenatchee World. However, the local radio station (North Cascades Broadcasting) aired the public meeting information immediately following receipt of the release, and also included it on their web site for community calendar events. Although public meetings are forums for information exchange with the Washington Department of Fish and Wildife (WDFW), the agency does accept written comments throughout the public meeting period, and some citizens have been known to participate in the meeting via phone. Locations for the public meetings within the regions were chosen for regional accessibility (central location), and were the primary location for the proposed lake rehabilitations.

Rotenone is an approved organic pesticide that does breakdown quickly in the aquatic and terrestrial environment. The decomposition rate is inversely related to the water or air temperature as well as sun exposure. That is, the warmer the water or air, the faster rotenone decomposes. Complete decomposition usually occurs within the aquatic environment four weeks post-treatment. The WDFW is required through their application use permit to collect lake water samples at four weeks post-treatment to be tested for rotenone and other by-products by an independent lab. Rotenone is not a poison, but rather oxygen absorption inhibitor. The product originates from a South/Central American root, which has been used for centuries by indigenous tribes to catch fish to eat. Rotenone affects only those organisms that respire through their gills, which can include certain life stages of amphibians and macro-invertebrates along with

fish. However, most life stages susceptible to rotenone are not present when lakes are rehabilitated by the WDFW (late fall or early spring). Lake rehabilitations are coordinated with area wildlife and habitat biologists to ensure optimal timing and protection of non-target organisms.

Recreational angler surveys continue to indicate trout as the most preferred fish to target. However, to meet the interests of warmwater fish anglers, the WDFW began operation and production of various warmwater species about 8 years ago. The WDFW warmwater program continues to improve production, diversity and opportunity where appropriate. All lakes are not created equal, so not all lakes are suitable for quality bass production. As a rule, lakes in Washington can produce 1 lb. of bass to 10 lbs. of trout, principally because trout can grow to four lbs. within a few years feeding on plankton, whereas bass require continually larger food sources to achieve similar size. In addition, optimal growth temperature for bass is 68 degrees Fahrenheit and only 48 degrees Fahrenheit for trout. Lakes with extensive shallows (less than 30 ft.) can provide a lot of the food necessary to meet the continually increasing food source demands of bass. As you are probably aware, Okanogan County has few lakes with extensive shallows and water temperatures that exceed the mid-60s for any length of time. Whitestone Lake, about a 25-mile drive from Omak has quality bass habitat, better than average warmwater fish temperatures, and consequently produces largemouth bass in excess of 15 inches regularly. Palmer Lake, about a 45-minute drive from Omak is another lake that produces nice smallmouth as well as largemouth bass. The Okanogan River, particularly in the spring has some excellent smallmouth bass fishing south of Malott.

In the future, the WDFW will attempt to hold public meetings within more than one location of a region. However, should it be difficult for you to attend public meetings, we encourage you to provide written comments during the public review process. Your input is valuable.

Sincerely,

Heather Bartlett
Central Region Fish Program Manager

## Jim Uehara - Public meeting for Lake Rehabs - Olympia

**From:** Jim Uehara
**To:** Bartlett, Heather; Easterbrooks, John; Fuller, Ross; Gibbons, Bob; Korth, Jeff; Luers, Madonna; Whalen, John
**Date:** 07/23/2004 8:36 AM
**Subject:** Public meeting for Lake Rehabs - Olympia
**CC:** Uehara, Jim

Last night we held the third of the scheduled three public meetings for this year's proposed lake rehabilitation projects. The meeting was to start at 7 PM. Gibbons and Uehara posted signs at 6:15 PM and waited by public entrances until 7:30 PM. No one from the public showed up for the meeting. We closed it down at 7:35 PM.

Jim Uehara
Resident/Native Fish Program Manager
Washington Dept. of Fish and Wildlife
Olympia WA 98501-1091
(360) 902-2738
ueharjku@dfw.wa.gov

**From:** "Phil Lee" <phillee@televar.com>
**To:** <fishpgm@dfw.wa.gov>
**Date:** 7/17/04 7:47PM
**Subject:** Fw: Treatment of Rat Lake

----- Original Message -----
From: "Phil Lee" <phillee@televar.com>
To: <teamspokane@dfw.wa.gov>
Sent: Saturday, July 17, 2004 7:44 PM
Subject: Treatment of Rat Lake

> I fly fish Rat Lake during the catch and release season. I catch lots of nice rainbows,
> brookies and browns. My last brown was 4 lbs (est.) I have never had a problem with
> trash fish and I do not think the little catfish there warrant a poisioning program when
> the fishing is so good. I use a fish finder and there are lots of nice fish in the
lake.
> Please do not poison this lake. If you do you will also have to treat the rearing pond
> and Whitestone pond above it since they also have catfish in them. I use my float tube
> and fish the lake a lot. Please call or email me if you have any info I need to support
> your proposal Philip Lee, 509 686 4021, Bridgeport.
>

Bob,

I talked to Mr. Lee directly. He appreciated the call. Although I contend we need to do the rehab. If it has to wait, I guess that's okay, too, consider this correspondence. Recruitment is poor, fish surviving are deep (a sign a rehab is imminent).

Washington Department of Fish and Wildlife
Region Two District Six Office
PO Box 753
Omak, WA 98841

July 13, 2004

Mr. Ernie Buchanan
PO Box 290
Okanogan, WA 98840

RE: Rehabilitation of Rat and Fish Lakes (E208056)

Thank you Mr. Buchanan for your letter. I will try to answer each of your concerns and give you a short explanation as to why we want to pursue the course of action that we have proposed.

(1) We held the public meeting in Ephrata this year, because the bulk of the lakes that we were going to rehab were in that area. We also offer a comment period before the meeting to allow people to either call or write us, if by some chance they cannot make the meeting. Based on your concerns though, we will try to schedule meetings in the Okanogan/Omak area for future rehabs in Okanogan County.
(2) Fish Lake was chemically treated in 1996 with Rotenone and the treatment was very successful in removing largemouth bass. As long as there are no subsequent introductions of bass to trout waters similar to Fish Lake, then there is no need to rehabilitate. Unfortunately, the illegal planting of bass in the lake has forced us to use Rotenone once again. Rat Lake was rehabbed eighteen years ago, but the recent addition of brown bullheads has made it necessary to treat the lake next spring.
(3) Fish Lake normally gets a plant of fingerling rainbow trout, but was not planted this year due to the fact that we were planning a rehab in the fall. Fish Lake has been managed as a trout fishery for quite a long time, so I would expect us to continue along that path. Having predator fish such as bass in a relatively small lake such as Fish makes it impossible for us to plant fingerling trout, which is what the bulk of our hatcheries produce.
(4) I would agree with you that we need to have a liberal open season on the lakes that we plan to rehabilitate, but unfortunately we must be sure that the rehab is actually going to take place before we change the restrictions. What has been talked about is the need for our permitting process to move quicker, so that we can make the appropriate changes in the limits and/or gear restrictions a good time before the treatment to allow the public better utilization of the resource.
(5) Rotenone is not a poison, but in fact an approved herbicide, which is used extensively in farming. The label on the chemical states that fish cannot be consumed after treatment, not because it is dangerous, but because the manufacturer does not want to do the necessary testing at added cost, to change

the label. We do make great efforts to post the lake prior to and after the treatment, so that the public is aware of any problems.

(6) A good percentage of the lakes in Okanogan County are better suited for trout than spiny rays. We base our requests for species planted on a number of factors, including temperature, alkalinity, size and depth of lake, and angler preference to name a few. Our creel surveys have indicated that trout are the species that most fisherman desire to catch.

(7) There are a few good spiny ray lakes within one hour's drive from Omak. Palmer Lake has both largemouth and smallmouth bass in good numbers. Whitestone has the reputation for some very big largemouth as well as channel catfish up to nine pounds. Washburn Island Pond has been producing exceptional largemouth bass this season, along with the occasional channel catfish.

I hope that I have helped to answer some of your questions about Rat and Fish Lake, as well as explaining why we need to chemically treat waters in Okanogan County. If you have any questions, please call me at (509) 826-7341. Thanks.

Sincerely,

Bob Jateff
District Six Fish Biologist
Washington department of Fish and Wildlife

**From:** Program Fish Management
**To:** Heather Bartlett; Program Fish Management
**Date:** 7/8/04 10:43AM
**Subject:** E208056 Rehabilitation of Lakes

**PLEASE PREPARE A DRAFT RESPONSE AND REPLY BACK TO ME AT FishPgm@dfw.wa.gov "Program Fish Management" - THANKS!! :)**
*****PLEASE NOTE THE LOG NUMBER IN THE SUBJECT LINE*****
**IF YOU CANNOT HAVE THIS RETURNED TO ME WITHIN 7 WORKING DAYS, PLEASE REPLY BACK IMMEDIATELY WITH THE APPROPRIATE STAFF IT SHOULD BE RE-ASSIGNED TO.**
**~ KRISTI WALSH (360) 902-2702**

>>> "Ernie Buchanan" <ernie@bossig.com> 07/07/04 12:14PM >>>
Please forward this message to the appropriate personnel.

I am opposed to the poisoning of Fish Lake and Rat Lake in Okanogan County.
1. No public meeting were held or will be held in Okanogan County. All meeting are held in Ephrata so public input will be limited. Public meeting should be held in EACH County that the State determines a lake will be poisoned.
2. Rotenone is a poison and does kill fish but it does not kill all the undesired fish in the lake. Fish Lake was poisoned not too long ago and once again the Game Department is wasting their money on job security issue.
3. Was Fish Lake planted with trout this year? If so then the Game Department is wasting those fish that were planted. Trout and bas can coexist in the same body of water. Banks Lake for example has both trout and bass. Of course its not in Okanogan County so the Game Department allows spiny rays in those waters but not Okanogan County.
4. Once a lake is suggested for Rehabilitation the Lake should immediately be open for fishing and all limits and gear restriction should be lifted. Its already a done deal and Fish Lake and Rat Lake will be poisoned this year. I have seen this activity taken place before. Where they use the excuse that it is just "porposed" and not finalized yet so we can't open the lake for fishing but as soon as its finalized we will open the lake up. Any Lake that is "proposed" for rehab should be open for the taking of fish for 1 year with no gear or limit restrictions. But the Game Department does not want that to happen.
5. No fish can be retrived after the lake is poisoned. That proposes a health problem that has not been address by the Game Department.
6. Who determines what species of fish will be planted in the lake? The Game Department is in the busines of raising trout and that is what they want in all of our lakes.
7.We do not have a spiny ray lake in the near vicinity of Okanoga-Omak complex.

Once again I am opposed to the use of Rotenone in Okanogan County waters.

Ernie Buchanan

**CC:** John Whalen

Washington Department of Fish and Wildlife
Region Two District Office
PO Box 753
Omak, WA 98841
(509) 826-7341

July 8, 2004

Silvernail Lake
Okanogan County, Washington

Dear Mr. Barker

Thank you for taking the time to review this letter, your input in regards to this document is crucial to the success of fishery management in **Silvernail** Lake.

**Silvernail** Lake is on a list to be treated with the pesticide rotenone, powdered product and/or liquid product during the month of **October 2004**, to eliminate the current fish populations that inhabit the lake, and reestablish a **trout** fishery. Rotenone is an organic, natural compound that is not persistent in the environment and not toxic to humans, livestock or any warm-blooded organism at the concentrations used to eradicate fish. The entire lake will be treated at a concentration of **one** part per million with rotenone powder and/or liquid product.

This rotenone treatment is regulated under permits issued by the Washington Department of Ecology (DOE), Water Quality Program. The Environmental Protection Agency (EPA) and DOE have approved this aquatic pesticide for this purpose.

The product label restricts the application of rotenone in waters within ½ mile of an irrigation or potable water withdrawal. As a result, surface water right holders must agree to cease use of water from the lake for the period of toxicity. Without such approval the project will not be conducted. The requirement to cease use of water stems from concerns that exposure to rotenone in drinking water may cause unnecessary health risks. See the attached product label and Material Safety Data Sheet (MSDS) for details. Rotenone will most likely not persist in the lake past 8 weeks. These health risks do not apply to any other water source adjacent to the lake, such as wells or cisterns.

DOE has established new regulations for the application of rotenone under a process called the National Pollutant Discharge Elimination System Permit. The new regulations require the Washington Department of Fish and Wildlife (WDFW) to monitor lake toxicity, after application. WDFW will notify water right holders in writing when rotenone is no longer detectable in **Silvernail** Lake and water withdrawal can resume.

Please review the product information on the consumer label and MSDS for powdered rotenone and/or liquid rotenone product so you are aware of the cautions and restrictions concerning the use of rotenone.

If a water right holder on the lake is using surface water for potable domestic use, and requires an alternative water source during this period of time, WDFW will provide that individual with a safe alternative water source if requested.

The timing of the project in **Silvernail Lake** is directed at eliminating conflicts with irrigation water use, and minimizing any recreational use conflicts. It is assumed that there would be limited, or no need, for irrigation water from the lake at this time of year.

If the proposed treatment proceeds, notices will be posted at the shoreline and at public access areas during the application of rotenone. These postings will be maintained until the lake has detoxified. You will also receive additional notification regarding the proposed treatment.

The WDFW understands that this letter may generate a number of questions and concerns amongst water right holders. Information on rotenone and its use is enclosed with this letter. If you have questions or concerns please contact WDFW, or the Department of Ecology at the phone numbers listed below. If **Silvernail** Lake is your sole source of domestic or irrigation water, please notify the contact listed below.

**If you hold a surface water withdrawal permit, please indicate your desire by signing the appropriate statement below, and return to the Department of Fish and Wildlife. If this notification is not returned prior to July 15, 2004, the treatment project cannot proceed.**

**I have read the information for [chose one: (powdered rotenone), (powdered rotenone and liquid rotenone), (liquid rotenone)] product and understand the need to cease any water withdrawal from the lake, and agree not to withdraw water from the lake for up to 8 weeks or until notified after the treatment is applied.**

_____ **Date**

**In light of all the information provided in this letter and the enclosed documents I do not agree to cease surface water use.**

_____ **Date**

Sincerely,

Washington State Department of Fish and Wildlife
Fish Program - Fish Management Division

Enclosures

**Contact Phone Numbers:**

**Bob Jateff**
**WDFW District 6 Fish Biologist (509) 826-7341**

**Department of Fish and Wildlife Regional Office -(509) 754-4624**

**Department of Ecology - Eastern Regional Office - Water Quality Program (509) 456-2926**

**Attachment 1: Waters Proposed by WDFW for Treatment With Rotenone FY 2006 WA F-125-D-03**

| Name Location | | Grid Location | | | Size | | Rotenone required @ 5% | | Treatment History | | Proposed Treatment | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | Years Previously | Target | Treatment | Outflow at |
| County | Water | Section | Township | Range | Acres | Acre Ft. | Powder (lbs.) | Liquid (gal.) | Treated | Species | Dates | Treatment |
| Grant | Park | 10, 11, 15 | 24N | 27E | 342 | 13,049 | 58,000 | 15 | 59,63,76,81,86,96 | PS, YP | Fall 2005 | To Blue Lk. |
| Grant | Blue | 20, 21, 29 | 24N | 27E | 532 | 21,353 | 36,150 | 25 | 52,59,63,69,76,81,86,96 | PS, YP | Fall 2005 | To Alkali Lk. |
| Grant | Alkali | 36 | 24N | 26E | 308 | 2,449 | 0 | 0 | 52,59,63,83,96 | PS, YP | Fall 2005 | None |
| | | 1 | 23N | 26E | | | | | | | | |
| | | 31 | 24N | 27E | | | | | | | | |
| | | 6 | 23N | 27E | | | | | | | | |
| | | | | | | | 94,150 | 40 | | | | |
| **Alternate Lakes** | | | | | | | | | | | | |
| **Little Pend Oreille Chain** | | | | | | | | | | | | |
| Pend Oreille | *Leo* | 3 | 36N | 42E | 43 | 785 | 23,260 | 90 | 52,60,68,88,97 | PS, YP | Fall 2006 | Flows to Heritage Lk. |
| Stevens | *Heritage* | 8, 9, 17 | 36N | 42E | 81 | 747 | | | 60,68,88,97 | PS, YP | Fall 2006 | Flows to Thomas Lk. |
| Stevens | *Thomas* | 8, 17 | 36N | 42E | 164 | 4,869 | | | 52,60,68,88,97 | PS, YP | Fall 2006 | Flows to Gillette Lk. |
| Stevens | *Gillette* | 17, 18, 19, 20 | 36N | 42E | 48 | 1,628 | | | 52,60,68,88,97 | PS, YP | Fall 2006 | Flows to Sherry Lk. |
| Stevens | *Sherry* | 19, 20 | 36N | 42E | 26 | 818 | | | 52,60,68,88,97 | PS, YP | Fall 2006 | None at time of treatment |
| Okanogan | Spectacle | 2,4,8,9,10 | 38N | 26E | 307 | 9,754 | 26,524 | 50 | 51,68,74,79,85,93 | PS, LMB | Fall 2006 | None at time of treatment |
| Grant | Quincy | 14,15 | 19N | 23E | 62 | | 3,600 | 30 | 67,72,79,86,93,99 | BG, PS, LMB, YP | Fall 05-Spr 06 | None at time of treatment |
| Grant | Burke | 15 | 19N | 23E | 70 | | 3,600 | 30 | 66,70,73-P,74-P,75,77,83,87,93,99 | YP, PS | Fall 05-Spr 06 | None at time of treatment |
| Grant | **Warden** | 10,15 | 17N | 29E | 211 | | 23,125 | 45 | 66,69,80,91,99 | BBH,PS,YP | Fall 05-Spr 06 | Lind Coulee, can be blocked |
| Grant | **S. Warden** | 15 | 17N | 29E | 25 | | 1,407 | 15 | 69,80,91,99 | BBH,PS,YP | Fall 05-Spr 06 | Warden Lk |
| Grant | **Index Lks** | 11,15 | 17N | 29E | 26 | | 860 | 30 | 66,69,80,91,99 | BBH,PS,YP | Fall 05-Spr 06 | Warden Lk |
| Grant | Canal | 28 | 17N | 29E | 92 | | 10,600 | 20 | 59,68,75,82,87,90,97 | PS,YP | Fall 05-Spr 06 | Pit Lk - can be blocked |
| Grant | Windmill | 28 | 17N | 29E | 37 | | 5,800 | 10 | 68,75,82,87,90,97 | PS,YP | Fall 05-Spr 06 | Canal |
| Grant | N Windmill | 27 | 17N | 29E | 20 | | 1,850 | 20 | 75,90,97 | PS,YP | Fall 05-Spr 06 | Windmill |
| Grant | NN Windmill | 22 | 17N | 29E | 4 | | 250 | 10 | 90,97 | PS,YP | Fall 05-Spr 06 | N Windmill |
| Grant | June | 21 | 17N | 29E | 11 | | 840 | 10 | 90,97 | PS,YP | Fall 05-Spr 06 | NN Windmill |
| Grant | Marco Polo | 21 | 17N | 29E | 10 | | 840 | 10 | never been done | PS,YP | Fall 05-Spr 06 | None |
| Grant | Heart | 28 | 17N | 29E | 26 | | 4,800 | 10 | 59,87,97 | PS,YP | Fall 05-Spr 06 | Canal |
| Grant | Dot | 22 | 19N | 23E | 1 | | 50 | 10 | 62,67,73,76 | LMB, PS, YP | Fall 05-Spr 06 | U Spring |
| Grant | Cup | 22 | 19N | 23E | 1 | | 50 | 10 | 62,73,76 | LMB, PS, YP | Fall 05-Spr 06 | none |
| Grant | Upper Spring | 22 | 19N | 23E | 1 | | 50 | 10 | 75,76 | LMB, PS, YP | Fall 05-Spr 06 | L Spring |
| Grant | Lower Spring | 22 | 19N | 23E | 1 | | 50 | 10 | 75, 76 | LMB, PS, YP | Fall 05-Spr 06 | Cliff |
| Grant | Cascade | 22 | 19N | 23E | 3 | | 100 | 10 | 80,84 | LMB, PS, YP | Fall 05-Spr 06 | Cliff |
| Grant | Cliff | 16 | 19N | 23E | 2 | | 100 | 10 | never been done | LMB, PS, YP | Fall 05-Spr 06 | Dusty, can be blocked |
| Grant | Crystal | 22 | 19N | 23E | 2 | | 150 | 10 | never been done | LMB, PS, YP | Fall 05-Spr 06 | Cascade |
| Okanogan | Leader | 15,16 | 33N | 25E | 159 | 4,770 | 12,971 | 20 | 62,74,98 | SMB, PS | Fall 2006 | None at time of treatment |
| Okanogan | Big Green | 13, 24 | 34N | 25E | 50 | 925 | 2,515 | 10 | 54,61,82,86,90 | LMB | Spring 2006 | None at time of treatment |
| Okanogan | Little Green | 24 | 34N | 25E | 9 | 108 | 294 | 5 | 54,61,82,86,90 | LMB | Spring 2006 | None at time of treatment |
| Okanogan | Pearrygin | 1,6,31,36 | 35N | 21E | 212 | 6,620 | 18,002 | 30 | 51 | LMB | Fall 2006 | None at time of treatment |

WASHINGTON DEPARTMENT
**OF FISH AND WILDLIFE**
**FINAL DETERMINATION OF NON-SIGNIFICANCE**
**May 23, 2005**

# State of Washington
# DEPARTMENT OF FISH AND WILDLIFE

Habitat Program: 600 Capitol Way N, Olympia, Washington 98501-1091 - (360) 902-2534

## DETERMINATION OF SIGNIFICANCE AND ADOPTION OF EXISTING ENVIRONMENTAL DOCUMENTS

**Name of Proposal:** ANTIMYCIN-A AS A PISCICIDE IN WASHINGTON DEPARTMENT OF FISH AND WILDLIFE (WDFW) LAKE AND STREAM REHABILITATION PROGRAM: USE AND HEALTH RISKS

**Description of Proposal:** The Washington Department of Fish and Wildlife (WDFW) proposes to assess the use and risks of the piscicide (pesticide to kill unwanted fish) antimycin-A as an additional tool to eliminate or reduce populations of non-native fish. Antimycin-A would be an additional component of the WDFW's on-going fish management activities as described in the Final Supplemental Environmental Impact Statement on Lake and Stream Rehabilitation. This piscicide, approved by the U.S. Environmental Protection Agency and registered for use in the State of Washington, would be an alternative to rotenone in selected applications of WDFW's Lakes and Streams Rehabilitation program. The department proposes to review this information on potential effects to the environment and human health and request a modification of National Pollutant Discharge Elimination System Permit #WA0041009 based on this review.

**Proponent:** Washington Department of Fish and Wildlife 600 Capitol Way North, Olympia, Washington 98501-1091 **Project Contact:** Jon D. Anderson (360) 902-2711

**Location of Proposal, including street, if any:** Statewide, in lakes and streams where the need has been identified to remove exotic or undesirable fish species for rehabilitating and recovering native fish populations or other native aquatic communities. Washington

**Lead Agency:** Washington Department of Fish and Wildlife

**The adopted document(s) meet our environmental review needs for the current proposal and will accompany the proposal to the decision maker.**

**Adoption of Two (2)Existing Environmental Documents:** Pursuant to WAC 197-11-360 (3) After independent review the lead agency has identified and adopted the following two (2) documents as being appropriate for this proposal.

1. **Title of document being adopted:** WDFW Lake and Stream Rehabilitation Final Supplemental Environmental Impact Statement (FSEIS).

   **Agency that prepared document being adopted:** Washington Department of Fish and Wildlife
   **Date adopted document was prepared:** January 2002

**Description of document (or portion) being adopted:** Summary introduction, proposed action, description of procedures and a detailed assessment of impacts.

2. **Title of document being adopted:** South Fork Flathead Watershed Westslope Cutthroat Trout Conservation Program. Environmental Impact Statement (EIS).

   **Agency that prepared document being adopted:** Bonnyville Power Administration

   **Date adopted document was prepared:** June 2004

   **Description of document (or portion) being adopted:** Chapter Three: Affected Environment and Environmental Consequences and Appendix D: Technical Appendix on Use of Piscicides

**EIS Required.** The lead agency has determined that this proposal may have a significant adverse impact on the environment. To meet the requirements of RCW 43.21C.030(2)(c), the lead agency is adopting the documents described above. Under WAC 197-11-360, there will be no scoping process for this EIS. An environmental checklist and non project review form and other materials indicating the likely environmental impacts are attached or can be reviewed at our offices.

**If the document being adopted has been challenged (197-11-630), please describe:** N/A

**Both documents are available to be read at:**
Washington Department of Fish and Wildlife - Natural Resources Building,
1111 Washington Street SE, Olympia, WA, Monday - Friday 8:00 am - 5:00 pm. - Sixth floor: Fish Program- Jon Anderson (360) 902-2711

**The following electronic versions are available**:
South Fork Flathead Watershed Westslope Cutthroat Trout Conservation Program. Environmental Impact Statement (EIS): Chapter 3, and Appendix D: http://wdfw.wa.gov/hab/sepa/sepa.htm
and the EIS in its entirety: http://www.eh.doe.gov/nepa/docs/deis/eis0353/tocindex.html

WDFW Lake and Stream Rehabilitation Final Supplemental Environmental Impact Statement (FSEIS): http://wdfw.wa.gov/hab/sepa/sepa.htm

**Name of agency adopting the document:** Washington Department of Fish and Wildlife

**Contact person if other than responsible official:** Jon Anderson **Phone:** (360) 902-2711

**Agencies, affected tribes and members of the public are invited to comment on this proposal.**

**Public Meeting:** The WDFW will hold two public meetings to answer questions and gather public input on this proposal.

Spokane: **May 3, 2005- 7:00PM-8:00PM**
**Washington Department of Fish and Wildlife-Region 1**
**8702 North Division Street**
**Spokane, Washington 99218-1199**

Olympia: **May 4, 2005-7:00PM-8:00PM**
**Natural Resource Building, Room 172,**
**1111 Washington Street SE, Olympia, WA 98501**

This DS/Adoption is issued under WAC 197-11-360; the lead agency will **not act on this proposal for 30 days** from the date of issue below. Written comments should be received at the address listed below no later than **May 20, 2005**

**Responsible Official:** Teresa A. Eturaspe

**Position/Title:** SEPA/NEPA Coordinator, Regulatory Services Section, Habitat Program

**Address:** 600 Capitol Way North, Olympia, WA 98501

**Please contact:** Teresa A. Eturaspe **Phone:** (360) 902-2575 **Fax:** (360) 902-2946 or **e-mail:**habitatSEPA@dfw.wa.gov if you have questions or comments about this determination.

**DATE OF ISSUE:** April 20, 2005 **SIGNATURE:** Teresa A. Eturaspe

SEPA Log Number 05-034.dsadopt

**Distribution of Environmental Document:**

Department of Ecology, Environmental Review Section, Olympia
Department of Natural Resources, SEPA Center, Olympia
Washington Parks and Recreation Commission, Olympia
Washington Department of Transportation, Olympia
U.S. Army Corps of Engineers, Seattle
U.S. Fish and Wildlife Service, Western Washington Office, Lacey
U.S. Fish and Wildlife Service, Upper Columbia River Basin Field Office, Spokane
U.S. Environmental Protection Agency, Seattle
U. S. Forest Service, Region 6, Portland
U.S. National Parks Service, Seattle
NOAA - Fisheries, Seattle
Adams County Planning Department, Othello
Asotin County Planning Commission, Asotin
Benton County Planning and Building Department, Prosser
Chelan County Planning Department, Wenatchee
Clallam County Department of Community Development, Port Angeles
Clark County Planning Division, Vancouver
Columbia County Planning Department, Dayton
Cowlitz County Department of Building and Planning, Kelso
Douglas County Regional Planning Commission, East Wenatchee
Ferry County Planning Department, Republic
Franklin County Planning Department, Pasco
Garfield County Board of County Commissioners, Pomeroy
Grant County Planning Department, Ephrata
Grays Harbor Planning and Building Department, Montesano
Island County Planning Department, Coupville
Jefferson County Planning and Building Department, Port Townsend
King County Department of Development and Environmental Services, Renton
Kitsap County Department of Community Development, Port Orchard
Kittitas County Planning Department, Ellensburg
Klickitat County Planning Department, Goldendale
Lewis County Planning Department, Chehalis
Lincoln County Planning Department, Davenport
Mason County Planning Department, Shelton

**Distribution of Environmental Document (Continued):**

Okanogan County Planning Department, Okanogan
Pacific County Planning Department, South Bend
Pend Oreille County Planning Department, Newport
Pierce County Department of Planning and Natural Resource Management, Tacoma
San Juan County Planning Department, Friday Harbor
Skagit County Planning Department, Mount Vernon
Skamania County Planning Department, Stevenson
Snohomish County Department of Planning and Community Development, Everett
Spokane County Planning Department, Spokane
Stevens County Planning and Community Development, Colville
Thurston County Planning Department, Olympia
Wahkiakum County Planning Department, Cathlamet
Walla Walla Regional Planning Department, Walla Walla
Whatcom County Planning and Development Services, Bellingham
Whitman County Planning Office, Colfax
Yakima County Planning Department, Yakima
Northwest Indian Fisheries Commission, Olympia
Columbia River Inter-Tribal Fisheries Commission, Portland
Point No Point Treaty Council, Kingston
Upper Columbia United Tribes, Wellpoint
Skagit System Cooperative, La Conner
Chehalis Tribe, Oakville
Colville Confederated Tribes, Nespelem
Cowlitz Indian Nation, Longview
Hoh Tribal Fisheries, Forks
Jamestown Klallam Indian Tribes, Sequim
Kalispell Tribe, Usk
Lower Elwha Klallam Tribe, Port Angeles
Lummi Indian Natural Resources, Bellingham
Makah Tribal Council, Neah Bay
Muckleshoot Tribal Fisheries, Auburn
Nisqually Tribe, Olympia
Nooksack Tribe, Deming
Port Gamble Klallam Tribe, Kingston
Puyallup Tribe of Indians, Tacoma
Quileute Tribe, La Push
Quinault Indian Nation, Taholah
Sauk-Suiattle Indian Tribe, Darrington
Shoalwater Bay Tribe, Tokeland
Skokomish Tribe, Shelton
Snoqualmie Tribe, Carnation
Spokane Tribe, Wellpoint
Squaxin Island Tribe, Shelton
Stillaguamish Tribe, Arlington
Suquamish Tribe, Suquamish
Swinomish Tribe, La Conner
Tulalip Tribes, Marysville
Confederated Tribes of the Umatilla Indian Reservation, Pendelton
Upper Skagit Tribe, Sedro Wooley
Yakima Indian Nation, Toppenish

**Distribution of Environmental Document (Continued):**

WDFW, Habitat Program, Region 1, Spokane
WDFW, Habitat Program, Region 2, Ephrata
WDFW, Habitat Program, Region 3, Yakima
WDFW, Habitat Program, Region 4, Mill Creek
WDFW, Habitat Program, Region 5, Vancouver
WDFW, Habitat Program, Region 6, Montesano
WDFW, Fish Program, Region 1, Spokane
WDFW, Fish Program, Region 2, Ephrata
WDFW, Fish Program, Region 3, Yakima
WDFW, Fish Program, Region 4, Mill Creek
WDFW, Fish Program, Region 5, Vancouver
WDFW, Fish Program, Region 6, Montesano
WDFW, Wildlife Program, Region 1, Spokane
WDFW, Wildlife Program, Region 2, Ephrata
WDFW, Wildlife Program, Region 3, Yakima
WDFW, Wildlife Program, Region 4, Mill Creek
WDFW, Wildlife Program, Region 5, Vancouver
WDFW, Wildlife Program, Region 6, Montesano

SPOKANE WALLEYE CLUB
RICHLAND ROD AND GUNCLUB
INLAND EMPIRE BASS CLUB
FISHING GUIDE
RON SAWYER
WALLEYE UNLIMITED
AUBURN MARINA
JIM LEDBETTER
BASS TOURNAMENTS
MARDON RESORT
TRAIL BLAZERS
WESTERN BASS CLUB
COLUMBIA BASIN WALLEYE CLUB
WA STATE BASS FEDERATION
HI LAKERS
MID-COL. R. WALLEYE CLUB
CAST FOR KIDS
CLARK-SKAMANIA FLYFISHERS
BLUE LAKE RESORT
WA FLY FISHING CLUB
ED MANARY
IEFFC
TOM SHUHDA
SPOKANE FLYFISHERS
PECK RITTER
PEND ORIELLE CONSERVATION DISTRICT

DEPARTMENT OF PUBLIC SERVICES
100 W. BROADWAY, SUITE 31
MONTESANO, WASHINGTON 98563-3614
PHONE (360) 249-4222
FAX (360) 249-3203



# GRAYS HARBOR COUNTY
## STATE OF WASHINGTON

May 16, 2005

Teresa A. Eturaspe
Department of Fish and Wildlife
State of Washington
600 Capital Way North
Olympia, Washington 98501-1091

RE: *Determination of Significance*

Ms. Eturaspe:

Thank you for the opportunity to comment on the Washington State Department of Fish and Wildlife's State Environmental Policy Act (SEPA) Determination of Significance (DS) and Adoption of Existing Environmental Documents for the proposed use of the pesticide *antimycin-A* as an additional fish management tool to eliminate or reduce populations of non-native fish in the State of Washington.

Grays Harbor County concurs that the proposal represents a probable significant adverse impact to the natural environment, and thereby merits the adoption and use of the Department's document entitled WDFW Lake and Stream Rehabilitation Final Supplemental Environmental Impact Statement in determining the proposal's potential effect to both the environment and human health. The pesticide *antimycin-A* is proposed as an alternative to the pesticide *rotenone*, which County records indicate was used in Lake Aberdeen and Failor Lake in Grays Harbor County during the 1950's.

We request that we be notified of any proposed change to the National Pollutant Discharge Elimination System (NPDES) permit that would allow for the application of *antimycin-A* within Grays Harbor County, as well being involved in the pre-treatment planning process for any body of water in Grays Harbor County proposed for treatment with this pesticide.

Please contact us at (360) 249-5579 should you have any questions concerning this comment.

Thank you again.

Sincerely,

Brian Shea
Planning and Building Division Director

Cc: file

**Public Services**
Kevin Varness, Asst. Director
Phone: 360-249-4222
Fax: 360-249-3203

**Public Works**
Russ Esses, Co. Engineer
Phone: 360-249-4222
Fax: 360-249-2153

**Planning & Building**
Brian Shea, Director
Phone: 360-249-5579
Fax: 360-249-3203

**Environmental Health**
Douglas George, Director
Phone: 360-249-4413
Fax: 360-249-3203

**Utilities & Development**
Kevin Varness, Director
Phone: 360-249-4222
Fax: 360-249-3203

**Facility Services**
Dennis Selberg, Director
Phone: 360-249-4222
Fax: 360-249-2753

**Emergency & Risk Management**
Anne Sullivan, Manager
Phone: 360-249-4222
Fax: 360-249-3805

Grays Harbor Co. Web Page
**co.grays-harbor.wa.us**

STATE OF WASHINGTON
FISH PROGRAM
FISH MANAGEMENT DIVISION
NATIVE RESIDENT SPECIES MANAGEMENT



**DATE:** 17 May 2005

**TO:** Teresa Eturaspe, WDFW SEPA Coordinator

**FROM:** Jon. Anderson

**SUBJECT:** Comment from Mr. Nick Romeo, Aquabiotics Corporation, relative to WDFW Environmental Checklist on Antimycin-A: Safety Procedures

I received a voice-mail from Mr. Nick Romeo during the week of May 9-13th, where he provided comment on the antimycin environmental checklist.

"On page 10 'Safety Procedures', your statement is that the label for antimycin requires the employees wear a purifying respirator and Tyvek coveralls.

"The label just calls for eye protection, like goggles, and rubber gloves.

"The label does not call for Tyvek coveralls, and certainly does not call for a respirator.

"That is the main difference between antimycin and rotenone. The applicators do not have to wear respirators.

"I wanted to bring this to your attention. As far as I know, nowhere in the label does it call for a respirator. I am certainly familiar with the label.

"A respirator could certainly be called for by State regulations, but not by the EPA label."

Mr. Romeo is correct. I assumed similar restrictions on antimycin use, based upon an outdated label for an older formulation of antimycin. Subsequent to my having developed the safety information, I received the current EPA Label for the Fintrol® formulation of antimycin that WDFW would be using. I neglected to update the information relative to the current label into the safety procedures portion of the checklist. The final adoption of the environmental checklist and the development of subsequent WDFW safety procedures for antimycin should reflect the current label restrictions.

cc: Jim Uehara, Fish Program
Bob Gibbons, Fish Program
Scott Loerts, Safety Program

# FAX

*Washington Department of Ecology*
*4601 North Monroe Street, Suite 202*
*Spokane, Washington 99205-1295*
*Phone: (509) 329-3400 Fax: (509) 329-3529*

**TO** Ms. Teresa Eturaspe
SEPA/NEPA Coordinator
Olympia WA

**DATE** 5/19/2005

**PHONE** (360) 902-2575

**FAX** (360) 902-2946
**EMAIL** habitatSEPA@dfw.wa.gov

**FROM** Arthur Buchan, M.S.
SEPA Coordinator
Phone: (509) 329-3550
Email: abuc461@ecy.wa.gov

**Pages (Including Cover):** 2

**MESSAGE** See Attached Information

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N. Monroe Street • Spokane, Washington 99205-1295 • (509) 329-3400

May 19, 2005

Ms. Teresa A. Eturaspe
SEPA/NEPA Coordinator
Regulatory Services Section
Department of Fish and Wildlife
600 Capitol Way North
Olympia, WA 98501

Ms. Eturaspe,

Thank you for the opportunity to comment on the Determination of Non Significance and Adoption of Existing Environmental Documents Antimycin-A, as a piscicide in Washington Department of Fish and Wildlife Lake and Stream Rehabilitation Program: Use and Health Risks (Proponent – Washington Fish and Wildlife). The Department of Ecology has reviewed the documents and has the following comments;

Water Quality Program

A water quality standards modification may be required from the Department of Ecology for this project (WAC 173-201A-110).

Any work in or adjacent to waterways that will adversely affect water quality must receive specific prior authorization from the Department of Ecology pursuant to WAC 173-201A-110. A short-term water quality standards modification may be issued if the proponent agrees to a number of specific construction practices and techniques designed to minimize water quality impacts. The construction schedule will be tied to the schedule on the Hydraulic Project Approval (HPA).

Office of Regulatory Assistance

If the applicant would like assistance getting through the regulatory permitting process, we suggest they contact Doug Jayne at The Office of Regulatory Assistance (ORA). Doug can be reached in Spokane at (509) 329-3460, email: djay461@ecy.wa.gov. ORA staff serves as a primary resource for agency contacts, applications, and key information concerning local, state, and federal environmental permits and regulatory requirements.

Sincerely,

Arthur Buchan, M.S.
SEPA Coordinator
Department of Ecology
Eastern Regional Office
4601 N. Monroe Street
Spokane, WA 99205-1295
Phone: (509)329-3550
Email: abuc461@ecy.wa.gov

2005-3031

**STATE OF WASHINGTON**
**DEPARTMENT OF FISH AND WILDLIFE**
Mailing Address: 600 Capitol Way N – Olympia, Washington 98501-1091 – (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building – 1111 Washington Street SE – Olympia, WA

# ADOPTION OF EXISTING ENVIRONMENTAL DOCUMENT

**Description of proposal**: Rehabilitation of lakes and/or streams to improve fishing for game fish in selected waters via the elimination of other non-game or competitor species of fish.

**Proponent:** Washington Department of Fish and Wildlife, 600 Capitol Way North, Olympia, Washington 98501-1091. Contact Person: John Hisata

**Location of current proposal:** Various Lowland Lakes in Ferry, Stevens, Grant and Okanogan Counties (See Addendum, attached)

**Title of document being adopted:** Final Supplemental Environmental Impact (FSEIS) - Lake and Stream Rehabilitation 1992-1993

**Agency that prepared document being adopted:** Washington Department of Wildlife (now Washington Department of Fish and Wildlife).

**Date adopted document was prepared:** August, 1992

**Description of document (or portion) being adopted:** FSEIS evaluating the alternatives for, and impacts from, rehabilitation of lakes and streams by the elimination of non-game or competitor species of fish to improve fishing for game fish through the use of the pesticide Rotenone.

**If the document being adopted has been challenged (197-11-630), please describe:** No.

**The document is available to be read at (place/time):**
Washington Department of Fish and Wildlife - Natural Resources Building,
1111 Washington Street SE, Olympia, WA
Monday - Friday 8:00 am - 5:00 pm.

**We have identified and adopted this document as being appropriate for this proposal after independent review. The document meets our environmental review needs for the current proposal and will accompany the proposal to the decision maker.**

**Name of agency adopting the document:** Washington Department of Fish and Wildlife

**Contact person if other than responsible official:** Bob Gibbons **Phone:** (360) 902-2329

**Responsible Official: Teresa A. Eturaspe**

**Position/Title:** SEPA/NEPA Coordinator, Regulatory Services Section

**Address:** 600 Capitol Way North, Olympia, WA 98501

**Please contact:** Teresa A. Eturaspe **Phone:** (360) 902-2575 **Fax:** (360) 902-2946 or **e-mail:** habitatSEPA@dfw.wa.gov if you have questions or comments about this determination.

**DATE OF ISSUE:** August 5, 2004 **SIGNATURE:** Teresa A. Eturaspe

SEPA Log Number: 04-063Adp2 (Adoption of FSEIS, dated 8/92, for Lake and Stream Rehabilitation 2004-2005, Addendum)

State of Washington
**DEPARTMENT OF FISH AND WILDLIFE**
Mailing Address: 600 Capitol Way N - Olympia, Washington 98501-1091 - (360) 902-2200, TDD (360) 902-2207
Main Office location: Natural Resources Building - 1111 Washington Street SE - Olympia, WA

# ADDENDUM TO FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENTS
## DATED: August, 1992 and January, 2002

**Name of FSEIS:**

1. Lake and Stream Rehabilitation Final Supplemental Impact Statement (FSEIS), 1992 - 1993 and
2. Lake and Stream Rehabilitation: Rotenone Use and Health Risks FSEIS, 2002

**Description of Proposal:** Rehabilitation of lakes and streams in eastern Washington (Ferry, Stevens, Okanogan, and Grant Counties), by the use of Rotenone, to improve fishing for game fish via the elimination of other non-game or competitor species of fish. The FSEIS' applied to statewide coverage.

**Proponent:** Washington State Department of Fish and Wildlife, 600 Capitol Way North, Olympia, Washington 98501-1091. Contact Person: John Hisata

**Lead Agency:** Washington Department of Fish and Wildlife

**The lead agency is providing updated information on this project that may be of interest to other agencies or the public. The updated information provided below does not substantially change the analysis of significant impacts in the existing environmental impact statements.**

The original Final Supplemental Environmental Impact Statement, dated August, 1992, was reviewed as a statewide proposal. Implementation of the FSEIS includes the following lakes for the 2003-2004 season:

**Location of Current Proposals**

Ellen Lake
Sections 26, 27, Township 37, Range 36 East, WM
Ferry County

Rocky Lake
Sections 34, Township 35 North, Range 39 East, WM
Stevens County

Fish Lake
Sections 16, Township 36 North, Range 25 East, WM
Okanogan County

Silvernail Lake
Sections 06, Township 40 North, Range 27 East, WM
Okanogan County

Rat Lake
Sections 22, Township 31 North, Range 24 East, WM
Okanogan County

Sago Lake
Sections 30, Township 17 North, Range 29 East, WM
Grant County

Hourglass Lake
Section 30, Township 17 North, Range 29 East, WM
Grant County

Widgeon Lake
Sections 30, Township 17 North, Range 29 East, WM
Grant County

Hampton U.Lake
Sections 30, Township 17 North, Range 29 East, WM
Grant County

Hampton L Lake
Sections 30, 31 Township 17 North, Range 29 East, WM
Grant County

Hen Lake
Sections 30, Township 17 North, Range 29 East, WM
Grant County

Hampton SI Lake
Sections 30, 31 Township 17 North, Range 29 East, WM
Grant County

Dabbler Lake
Sections 31, Township 17 North, Range 29 East, WM
Grant County

Marie Lake
Sections 31, Township 17 North, Range 29 East, WM
Grant County

Piller Lake
Sections 19, Township 17 North, Range 29 East, WM
Grant County

Snipe Lake
Sections 19, Township 17 North, Range 29 East, WM
Grant County

Cattail Lake
Sections 19, Township 17 North, Range 29 East, WM
Grant County

Gadwall Lake
Sections 19, Township 17 North, Range 29 East, WM
Grant County

Poacher Lake
Sections 19, Township 17 North, Range 29 East, WM
Grant County

Lemna Lake
Sections 19, Township 17 North, Range 29 East, WM
Grant County

Shovler Lake

Sections 19, Township 17 North, Range 29 East, WM
Grant County

N. Potholes Reserve

Sections 33,34, Township 17 North, Range 27 East, WM
Sections 03, 04, 09, 10, Township 18 North, Range 27 East, WM

**Based on the original Final Supplemental Environmental Impact Statement (dated, 8/92), the additional Supplemental Environmental Impact Statement (dated, 1/02) and the updated information provided in this addendum, the lead agency has determined that a new threshold determination is not warranted.**

The lead agency will not act on this proposal for 30 days from the date of issue below. Comments must be submitted by: **September 04, 2004.**

**Responsible Official: Teresa A. Eturaspe**

**Position/Title:** SEPA/NEPA Coordinator, Regulatory Services Section

**Address:** 600 Capitol Way North, Olympia, WA 98501

**Please contact:** Teresa A. Eturaspe **Phone:** (360) 902-2575 **Fax:**(360) 902-2946 or **e-mail:**habitatSEPA@dfw.wa.gov if you have questions or comments about this determination.

**DATE OF ISSUE:** August 5, 2004 **SIGNATURE:** Teresa A. Eturaspe

SEPA Log Number: 04-075add (Addendum to Lake and Stream Rehabilitation, FSEIS, 1992 and Lake and Stream Rehabilitation: Rotenone Use and Health Risks, FSEIS, 2002)

**Distribution of Environmental Document:**

Department of Ecology, Environmental Review Section, Olympia
Department of Natural Resources, SEPA Center
U.S. Fish and Wildlife Service, Upper Columbia River Basin Field Station, Spokane
US Army Corps of Engineers, Seattle
NOAA - Fisheries, Seattle
Natural Resource Conservation Service, Spokane
Ferry County Planning Department, Republic
Colville Confederated Tribes, Nespelem
Spokane Tribe, Wellpinit
Columbia River Inter-Tribal Fisheries Commission, Portland, OR
WDFW, Habitat Program; Region 1, Spokane
WDFW, Fish Program; Region 1, Spokane
WDFW, Wildlife Program; Region 1, Spokane
WDFW, Habitat Program; Region 2, Ephrata
WDFW, Fish Program; Region 2, Ephrata
WDFW, Wildlife Program; Region 2, Ephrata
Stevens County Planning & Community Development, Colville
Okanogan County Planning Department, Okanogan
Okanogan Board of Commissioners, Okanogan
Yakima Nation, Toppenish
Grant County Planning Department, Ephrata
Washington Toxics Coalition
Ben Schroeter

**STATE OF WASHINGTON**
**DEPARTMENT OF FISH AND WILDLIFE**
Mailing Address: 600 Capitol Way N – Olympia, Washington 98501-1091 – (360) 902-2200, TDD (360) 902-2207
Main Office Location: Natural Resources Building – 1111 Washington Street SE – Olympia, WA

# ADOPTION OF EXISTING ENVIRONMENTAL DOCUMENT

**Description of proposal:** Review of new information on human health issues that may indicate a change of policy concerning how rotenone is used; provide policy and framework for safe application of rotenone, provide a policy that will address health concerns of inert ingredients often used with rotenone, and provide a policy and framework to protect both groundwater and the public when rotenone is used.

**Proponent:** Washington Department of Fish and Wildlife, 600 Capitol Way North, Olympia, Washington 98501-1091. Contact Person: John Hisata

**Location of current proposal:** Various Lowland Lakes in Ferry, Stevens, Grant and Okanogan Counties (See Addendum, attached)

**Title of document being adopted:** Final Supplemental Environmental Impact (FSEIS) - Lake and Stream Rehabilitation: Rotenone Use and Health Risks, January, 2002

**Agency that prepared document being adopted:** Washington Department of Fish and Wildlife.

**Date adopted document was prepared:** January, 2002

**Description of document (or portion) being adopted:** FSEIS evaluating impacts from, and policies to reduce, any health risks from the use of the pesticide Rotenone.

**If the document being adopted has been challenged (197-11-630), please describe:** No.

**The document is available to be read at (place/time):**
Washington Department of Fish and Wildlife - Natural Resources Building,
1111 Washington Street SE, Olympia, WA
Monday - Friday 8:00 am - 5:00 pm.

**We have identified and adopted this document as being appropriate for this proposal after independent review. The document meets our environmental review needs for the current proposal and will accompany the proposal to the decision maker.**

**Name of agency adopting the document:** Washington Department of Fish and Wildlife

**Contact person if other than responsible official:** Bob Gibbons **Phone:** (360) 902-2329

**Responsible Official:** Teresa A. Eturaspe

**Position/Title:** SEPA/NEPA Coordinator, Regulatory Services Section

**Address:** 600 Capitol Way North, Olympia, WA 98501

**Please contact: Teresa A. Eturaspe Phone:** (360) 902-2575 **Fax:** (360) 902-2946 or **e-mail:** habitatSEPA@dfw.wa.gov if you have questions or comments about this determination.

**DATE OF ISSUE:** August 5, 2004 **SIGNATURE:** Teresa A. Eturaspe

SEPA Log Number: 04-063Adp1 (Adoption of FSEIS, dated 1/02, for Lake and Stream Rehabilitation 2004-2005, Addendum)